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# OF THE
# MEDICAL SCIENCES.

EDITED BY

**ISAAC HAYS, M.D.,**

FELLOW OF THE PHILADELPHIA COLLEGE OF PHYSICIANS; MEMBER OF THE
AMERICAN MEDICAL ASSOCIATION; OF THE AMERICAN PHILOSOPHICAL SOCIETY; OF THE
ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA; ASSOCIATE FELLOW
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## TO READERS AND CORRESPONDENTS.

The communication of Dr. J. B. Porter is in type, and shall appear in our next No., as shall also the papers of Drs. Casselberry and Halsey.

A number of communications are on hand which shall receive early attention.

In the review of the "Report of Sickness and Mortality in the U. S. Army." which appeared in the number of this Journal for July last, an apparent discrepancy in the statistics of cholera was noted (*vide* p. 138 of July No.). This, we learn from an authentic source, is to be explained by the fact that all the quarterly abstracts throughout that work are for quarters ending on the 31st March, 30th June, 30th September, and 31st December; the year being from January to January. This course was adopted for the purpose of showing the influence of the seasons in each year. In the consolidated abstract, which embraces the *yearly* record of all the diseases occurring in the army (*vide* pages 488 to 493 of Report), the official annual reports of the Surgeon-General were followed, which are required, *by law*, to be made for the *fiscal year*, beginning on July 1st, and ending on June 30th following.

The following works have been received:—

Medical and Statistical Returns of the Baltic and Black Sea Fleets during the years 1854 and 1855. Ordered by the House of Commons, February, 1857. (From the Admiralty.)

Disorders of the Blood. By Julius Vogel, M. D., Prof. of Clinical Medicine in the University of Giessen. Translated and edited by Chunder Coomar Dey, Graduate of the Medical College of Bengal. Calcutta, 1856. (From the Translator.)

Ophthalmic Hospital Reports, and Journal of the Royal Ophthalmic Hospital. Edited by J. F. Streatfeild. October, 1857. (From the Editor.)

The Medical Profession in Great Britain and Ireland, with an Account of the Medical Organization of France, Italy, Germany, and America. By Edwin Lee, M. D. Parts I. and II. London, 1857. (From the Author.)

Human Histology in its Relations to Descriptive Anatomy, Physiology, and Pathology. With 434 illustrations on wood. By E. R. Peaslee, A. M., M. D., &c. &c. Philadelphia: Blanchard & Lea, 1857. (From the Publishers.)

Lectures on the Diseases of Women. By Charles West, M. D., &c. Part I. Diseases of the Uterus. Philadelphia: Blanchard & Lea, 1857. (From the Publishers.)

Medical Lexicon. A Dictionary of Medical Science; containing a Concise Explanation of the Various Subjects and Terms of Anatomy, Physiology, Pathology, Hygiene, &c. &c. &c., with French and other Synonymes. By Robley Dunglison, M. D., &c. &c. &c. Revised and very greatly enlarged. Philadelphia: Blanchard & Lea, 1857. (From the Publishers.)

The Principles and Practice of Obstetrics; Including the Treatment of Chronic Inflammation of the Uterus, considered as a Frequent Cause of Abortion. By Henry Miller, M. D., Prof. of Obstetric Medicine in Med. Depart. Univ. of Louisville. With illustrations on wood. Philadelphia: Blanchard & Lea, 1858. (From the Publishers.)

Materia Medica and Therapeutics; with Ample Illustrations of Practice in all the Departments of Medical Science, with very copious Notes of Toxicology, &c. A new edition, revised and enlarged. By Thos. D. Mitchell, M. D., Professor of Materia Medica in Jefferson Medical College. Philadelphia: J. B. Lippincott & Co., 1857. (From the Publishers.)

A Collection of Remarkable Cases in Surgery. By Paul F. Eve, M. D., Professor of Surgery in the University of Nashville. Philadelphia: J. B. Lippincott & Co., 1857. (From the Publishers.)

A Practical Treatise on the Diseases of Children. By J. Forsyth Meigs, M. D., &c. Third edition, carefully revised. Philadelphia: Lindsay & Blakiston, 1858. (From the Publishers.)

Report of an Operation for Removing a Foreign Body from Beneath the Heart. By E. S. Cooper, M. D. Published by the San Francisco Medico-Chirurgical Association. San Francisco, 1857.

Researches on Epilepsy: its Artificial Production in Animals, and its Etiology, Nature, and Treatment in Man. By B. E. Brown-Séquard, M. D., &c. Boston, 1857. (From the Author.)

Puerperal Fever: its Causes and Modes of Propagation. By Jos. M. Smith, M. D., &c. Read before the New York Academy of Medicine, 4th April, 1857. New York, 1857. (From the Author.)

Reports of Cases in the Surgical Practice of the Brooklyn City Hospital. By Robt. O. Butler, M. D. (From Dr. Jos. C. Hutchinson.)

Report on Infant Mortality in Large Cities; the Sources of its Increase and Means of its Diminution. By D. M. Reese, M. D.

Transactions of the American Medical Association. Instituted 1847. Vol. X. Philadelphia, 1857.

The Transactions of the New Hampshire Medical Society (Sixty-seventh Anniversary), held at Concord, June 2 and 3, 1857. Concord, 1857.

Transactions of the Medical Society of South Central New York, at the Tenth and Eleventh Annual Meetings, held at Binghampton, June 3, 1856, and at Owego, June 2, 1857. Binghampton, 1857. (From Dr. J. G. Orton.)

Transactions of the Second Session of the Medical Society of the State of California, convened at Sacramento, Feb. 11, 1857. Sacramento, 1857.

Prize Essay. Rational Therapeutics; or, the Comparative Value of Different Curative Means, and the Principles of their Application. "Naturâ duce." By Worthington Hooker, M. D. Boston, 1857. (From the Author.)

An Essay on the Preservation of Health. By Goodwyn Nixon, M. D., Lowndes, Ala. Hayneville, Ala., 1857.

An Address on the Life and Character of Robert M. Porter, M. D., late Professor of Anatomy in the University of Nashville. By J. Berrien Lindsley, M. D., Chancellor of the University. Nashville, Tenn., 1856.

First Annual Report of the Superintendent of Health of the City of Providence; ending July 1, 1857. Providence, 1857.

Fourth Report to the General Assembly of Rhode Island, relating to the Registry and Returns of Births, Marriages, and Deaths in the State, for the year ending Dec. 31, 1856. Prepared under the direction of John R. Bartlett, Secretary of State, Providence, 1857.

Experimental Researches Relative to the Nutritive Value and Physiological Effects of Albumen, Starch, and Gum, when Singly and Exclusively Used as Food. Being one of the Prize Essays of the American Medical Association for 1857. By Wm. A. Hammond, M. D., Assistant Surgeon U. S. A. Philadelphia, 1857.

Urethro-Vaginal and Vesico-Vaginal Fistules. By N. Bozeman, M. D., of Montgomery, Ala. Montgomery, 1857. (From the Author.)

Annual Report to the Legislature of South Carolina Relating to the Registration of Births, Deaths, and Marriages, for the year ending Dec. 31, 1856. Columbia, S. C., 1857.

A Public Lecture on Medical Ethics, and the Mutual Relations of Patient and Physician. Delivered by appointment of the Memphis Medical Society. By A. P. Merrill, M. D. Memphis, 1857. (From the Author.)

Introductory Lecture delivered by D. Warren Brickell, M. D., Professor of Obstetrics in New Orleans School of Medicine, Nov. 3, 1857. New Orleans, 1857.

Pneumonia; its Pathology and Treatment. By E. Read, M. D., of Terre Haute, Ind. Nashville, 1857.

A Case of Fibrous Tumour of the Uterus, Accompanied with Excessive Hemorrhage, Successfully Treated by Excision. By B. F. Baker, M. D.

The Rights of Authors. By M. Paine, M. D.

The following Journals have been received in exchange:—

Le Moniteur des Hôpitaux Revue Médico-Chirurgicale de Paris. Redacteur en Chef M. H. De Castelneau. September, October, November, 1857.

Gazette Médicale de Paris. Nos. 34, 35, 36, 38, 39, 1857.

Revue de Thérapeutique Médico-Chirurgicale. Par A. Martin Lauzer, M. D. Sept., 1857.

Journal de Médecine de Bordeaux. Redacteur en Chef, M. Costes. March, April, July, August, September, October, 1857.

Eco Cientifico de Venezuela, Nicholas Milanohigo, Editor. April, May, June, July, August, September, October, 1857.

La Espagña Medica. Official de la Academia Quirurgica Cesaraugustana. Nos. 31, 36, 68, 69, 71.

The Medical Times and Gazette. October, November, December, 1857.

Edinburgh Medical Journal. September, October, December, 1857.

British Medical Journal. Edited by Andrew Winter, M. D. September, October, November, 1857.

The Dublin Hospital Gazette. August, October, November, 1857.

The British and Foreign Medico-Chirurgical Review. October, 1857.

The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D., D. C. L. October, 1857.

Guy's Hospital Reports. Edited by Sam'l Wilks, M. D., and Alfred Poland. Third Series, Vol. III.

The Glasgow Medical Journal. October, 1857.

The Sanitary Review and Journal of Public Health. Edited by Benjamin W. Richardson, M. D. October, 1857.

Dublin Medical Press. Nov. 4, 1857. [This is the only No. of this valued Journal we have received for several months.]

Archives of Medicine. Edited by Lionel S. Beale, M. B., F. R. S. No. 1.

The Medical Chronicle. Edited by Wm. Wright, M. D., and D. C. McCallum, M. D. October, November, December, 1857.

The Virginia Medical Journal. Edited by Drs. McCaw and Otis. October, November, December, 1857.

Southern Medical and Surgical Journal. Edited by Henry F. Campbell, M. D. and Robert Campbell, M. D. October, November, December, 1857.

The American Journal of Insanity. Edited by the Medical Officers of the New York State Lunatic Asylum. October, 1857.

The New Orleans Medical and Surgical Journal. Edited by Bennet Dowler, M. D. November, 1857.

Charleston Medical Journal and Review. Edited by C. Happoldt, M. D. November, 1857.

The North American Medico-Chirurgical Review. Edited by S. D. Gross, M. D., and T. G. Richardson, M. D. November, 1857.

The New Orleans Medical News and Hospital Gazette. Edited by D. W. Brickell, M. D., and E. D. Fenner, M. D. November, December, 1857.

The New York Journal of Medicine. Edited by Stephen Smith, M. D. November, 1857.

Buffalo Medical Journal. Edited by Sandford B. Hunt, M. D., and Austin Flint, Jr., M. D. November, December, 1857.

Nashville Journal of Medicine and Surgery. Edited by W. K. Bowling, M. D., assisted by Paul F. Eve, M. D. September, November, December, 1857.

The American Journal of Dental Science. Edited by Chapin A. Harris, M. D., D. D. S., and A. Snowden Piggot, M. D. October, 1857.

The American Medical Gazette. Edited by D. Meredith Reese, M. D. October, December, 1857.

The Western Lancet. Edited by George C. Blackman, M. D. September, October, November, 1857.

The Cincinnati Medical Observer. Edited by Drs. G. Mendenhall, J. A. Murphy, and E. A. Stevens. October, November, December, 1857.

The Medical and Surgical Reporter. Edited by S. W. Butler, M. D. October, November, December, 1857.

The New Hampshire Journal of Medicine. Edited by Geo. H. Hubbard, M. D. October, November, December, 1857.

The Southern Journal of the Medical and Physical Sciences. Edited by R. O. Currey, M. D. September, October, November, 1857.

The Peninsular Journal of Medicine. Edited by Drs. Pitcher, Palmer, Brodie, and Christian. October, November, December, 1857.

The St. Louis Medical and Surgical Journal. Edited by M. L. Linton, M. D., and Wm. M. McPheeters, M. D. September, November, 1857.

The Medical Independent. Edited by M. Gunn, M. D., and L. G. Robinson, M. D. October, November, 1857.

Atlanta Medical and Surgical Journal. Edited by Jos. P. Logan, M. D., and W. F. Westmorland, M. D. October, November, December, 1857.

The North Western Medical and Surgical Journal. Edited by N. S. Davis, M. D. October, November, 1857.

American Journal of Pharmacy. Edited by Wm. Procter, Jr. November, 1857.

The American Journal of Science and the Arts. Edited by Professors B. Silliman, B. Silliman, Jr., and James D. Dana. November, 1857.

The Ohio Medical and Surgical Journal. Edited by John Dawson, M. D. November, 1857.

The American Druggists' Circular and Chemical Gazette. October, November, December, 1857.

The American Medical Monthly. Edited by E. H. Parker, M. D., and J. H. Douglas, M. D. December, 1857.

Memphis Medical Recorder. Edited by Daniel F. Wright, M. D. July, September, November, 1857.

Communications intended for publication, and Books for Review, should be sent, *free of expense*, directed to Isaac Hays, M. D., Editor of the American Journal of the Medical Sciences, care of Messrs. Blanchard & Lea, Philadelphia. Parcels directed as above, and (carriage paid) under cover, to John Miller, Henrietta Street, Covent Garden, *London;* or M. Hector Bossange, Lib. quai Voltaire, No. 11, *Paris*, will reach us safely and without delay. We particularly request the attention of our foreign correspondents to the above, as we are often subjected to unnecessary expense for postage and carriage.

Private communications to the Editor, may be addressed to his residence, 1525 Locust St.

All remittances of money, and letters on the *business* of the Journal, should be addressed *exclusively* to the publishers, Messrs. Blanchard & Lea.

☞ The advertisement-sheet belongs to the business department of the Journal, and all communications for it should be made to the publishers.

To secure insertion, all advertisements should be received by the 20th of the previous month.

# CONTENTS

OF THE

# AMERICAN JOURNAL

OF THE

# MEDICAL SCIENCES.

NO. LXIX. NEW SERIES.

JANUARY, 1858.

## ORIGINAL COMMUNICATIONS.

### MEMOIRS AND CASES.

ART. PAGE

I. Observations on the Causes, Effects, and Treatment of Perforation of the Membrana Tympani. By Edward H. Clarke, M. D., Professor of Materia Medica in Massachusetts Medical College. - - - - - - 13

II. Clinical Report on Pulmonary Tuberculosis; giving an abridged account of Twenty-four Cases of Arrested Tuberculosis, with Remarks on the Management of the Disease. By Austin Flint, M. D., Professor of Clinical Medicine and Medical Pathology in the University of Buffalo, N. Y. - - - - - - - - - - - - - - - - - - 52

III. The Vital Statistics of War, as shown by the Official Returns of the British Army During the War with Russia, and by those of the United States Army During the War with Mexico. By Assistant Surgeon Richard H. Coolidge, U. S. Army. - - - - - - - - - - 86

IV. Experiments with Bibron's Antidote to the Poison of the Rattlesnake. By William A. Hammond, M. D., Assist. Surg. U. S. Army. - - - 94

V. National Hotel Endemic. Autopsy; Remarks. By Jas. J. Waring, M. D., Professor of Physiology in the National Medical College, Washington, D. C. - - - - - - - - - - - - - - - - - 97

VI. Adhesive Plaster the best Counter-extending Means in Fractures of the Thigh. By D. Gilbert, M. D., Professor of Midwifery in the Medical Department of Pennsylvania College. - - - - - - - - - 105

VII. Case of Osteoid Growth connected with the Capsular Ligament of the Right Hip-Joint. By A. F. Sawyer, M. D., one of the Surgeons of the "Hospital of the Sisters of Mercy," San Francisco, Cal. (With three wood-cuts.) - - - - - - - - - - - - - - - - 109

VIII. Cupping the Interior of the Uterus. By Horatio R. Storer, M. D. (Read before the Boston Society for Med. Observation, Oct. 19, 1857.) 117

IX. Rupture of the Trachea, from a fall. Communicated by John L. Atlee, Jr., M. D., of Lancaster, Pa. - - - - - - - - - 120

X. Case of Fallopian Pregnancy resulting in Rupture of the Cyst and terminating in Death. Reported by Robert P. Harris, M. D., Philadelphia. [Read before the Philadelphia Pathological Soc., Nov. 25, 1857.] 123

ART. PAGE

XI. A new Uterine Elevator. By J. Marion Sims, M. D., Surgeon to the Woman's Hospital, New York. (With a wood-cut.) - - - - 132

XII. Exsection of the Trunk of the Second Branch of the Fifth Pair of Nerves, beyond the Ganglion of Meckel, for Severe Neuralgia of the Face: with Three Cases. By J. M. Carnochan, Professor of Surgery in the New York Medical College, Surgeon-in-chief to the State Hospital (New York), &c. - - - - - - - - - - - - - 134

XIII. A Singular Case of Catalepsy successfully treated with the Nitrate of Silver. By Wm. R. King, M. D., of Louisburg, N. C. - - - 143

## REVIEWS.

XIV. Elements of Pathological Anatomy. By Samuel D. Gross, M. D., Professor of Surgery in Jefferson Medical College, &c. Third edition, modified and thoroughly revised. Illustrated by 342 engravings an wood. Blanchard & Lea: Philad. 1857 8vo. pp. 771. - - - - - - 145

XV. Human Histology, in its Relations to Descriptive Anatomy, Physiology, and Pathology. With 434 illustrations on wood. By E. R. Peaslee, A. M., M. D., Professor of Physiology and Pathology in the New York Medical College, of Anatomy in Dartmouth College, and of Surgery in the Medical School of Maine, &c. &c. Philadelphia: Blanchard & Lea, 1857. 8vo. pp. 618. - - - - - - - - - - - 173

XVI. The Principles and Practice of Obstetrics: Including the Treatment of Chronic Inflammation of the Uterus, considered as a Frequent Cause of Abortion. By Henry Miller, M. D., Professor of Obstetric Medicine in the Medical Department of the University of Louisville. With illustrations on wood. 8vo. pp. 620. Philadelphia: Blanchard & Lea, 1858. 180

## BIBLIOGRAPHICAL NOTICES.

XVII. Transactions of American State Medical Societies.
1. Transactions of the Indiana State Medical Society, at its Eighth Annual Session, held in the City of Indianapolis, May 19, 1857. 8vo. pp. 74.
2. The Transactions of the New Hampshire Medical Society (Sixty-seventh Anniversary), held at Concord, June 2d and 3d, 1857. 8vo. pp. 104.
3. Transactions of the South Carolina Medical Association, at the Extra Meeting in Sumter, July 9, 1856, and at the Annual Meeting in Charleston, February 4, 1857. 8vo. pp. 64.
4. Transactions of the Second Session of the Medical Society of California, convened at Sacramento, February 11, 1857. 8vo. pp. 43. 199

XVIII. Reports of American Institutions for the Insane.
1. Of the Friends' Asylum, Philadelphia, for the fiscal years 1855–6 and 1856–7.
2. Of the U. S. Government Hospital, for the fiscal year 1855–6.
3. Of the Ohio Central State Asylum, for 1856.
4. Of the Ohio Northern State Asylum, for 1856.
5. Of the Ohio Southern State Asylum, for 1856. - - - - - - 213

XIX. American Surgical Tracts.
1. Remarks upon Fractures of the Scapula, with Cases presenting Striking Peculiarities. Read before the Medical Society of the State of Georgia, at their Annual Meeting in Augusta, 1857. By L. A. Dugas, M. D., Professor of Surgery in the Medical College of Georgia. 8vo. pp. 22.

ART. PAGE

2. Early History of the Operation of Ligature of the Primitive Carotid Artery, with a Report of Forty-eight Unpublished Cases, and a Summary of Forty-four Cases, with Remarks by Valentine Mott, M. D. By James R. Wood, M. D., Surgeon to Bellevue Hospital, President of the New York Pathological Society, etc. etc. (Reprinted from the N. Y. Journ. of Med. for July, 1857.) 8vo. pp. 59.

3. An Inaugural Thesis on Intra-Capsular Fractures of the Cervix Femoris. By John G. Johnson, of the State of Massachusetts. (Reprinted from the New York Journal of Medicine for May, 1857.) 8vo. pp. 32.

4. Surgical Cases, communicated to the Boston Society for Medical Improvement, October 27, 1856. By George H. Gay, M. D., one of the Surgeons of the Massachusetts General Hospital. (Republished From the Boston Med. and Surg. Journ., Nov. 1856.) 8vo. pp. 24.

5. Report of an Operation for Removing a Foreign Body from beneath the Heart. By E. S. Cooper, A. M., M. D. (Published by the San Francisco Medico-Chirurgical Association, as an additional paper to its Transactions for the year 1857.) San Francisco, 1857. 8vo. pp. 8. - - - - - - - - - - - - - - 222

XX. A Collection of Remarkable Cases in Surgery. By Paul F. Eve, M. D., Professor of Surgery in the Medical Department of the University of Nashville. Including a copious index. Philadelphia: J. B. Lippincott & Co., 1857. 8vo. pp. 858. - - - - - - - - - - - - 230

XXI. Medical Lexicon—A Dictionary of Medical Science, containing a Concise Explanation of the Various Subjects and Terms of Anatomy, Physiology, Pathology, Hygiene, Therapeutics, Pharmacology, Pharmacy, Surgery, Obstetrics, Medical Jurisprudence, Dentistry, etc.; Notices of Climate, and of Mineral Waters; Formulæ for Officinal, Empirical, and Dietetic Preparations, etc., with French and other Synonymes. By Robley Dunglison, M. D., LL. D., Professor of the Institutes of Medicine, etc., in the Jefferson Medical College of Philadelphia. Revised and very greatly enlarged. 8vo. pp. 992. Philadelphia, 1857: Blanchard & Lea. - - - - - - - - - - - - - - - - 232

XXII. On the Nature and Treatment of Club-foot and Analogous Distortions, involving the Tibio-tarsal Articulation. By Bernard E. Brodhurst, Assistant Surgeon to the Royal Orthopædic Hospital, etc. etc. London: Churchill, 1856. 8vo. pp. 134. - - - - - - - - - - 233

XXIII. Pathological and Surgical Observations: Including a short Course of Lectures delivered at the Lock Hospital, and an Essay on the Surgical Treatment of Hemorrhoidal Tumours. By Henry Lee, F. R. C. S., Surgeon to the Lock Hospital, Assistant Surgeon to King's College Hospital, etc. London: Churchill, 1854. 8vo. pp. 232. - - - - - - 234

XXIV. The Practice of Surgery. By James Miller, F. R. S. E., F. R. C. S. E., Professor of Surgery in the University of Edinburgh, etc. etc. Revised by the American Editor. Fourth American from the last Edinburgh edition. Illustrated by 364 engravings on wood. Philadelphia: Blanchard & Lea, 1857. 8vo. pp. 682. - - - - - - - - 236

# QUARTERLY SUMMARY

OF THE

# IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES.

## FOREIGN INTELLIGENCE.

### Anatomy and Physiology.

PAGE
1. Researches on the Histology of the Nervous System. By Prof. Jacubowitsch. - - - - 237
2. On the Structure of the Nervous Centres. By Prof. Lenhossek. 239
3. On the Nerves of the Intestinal Walls. By G. Meissner. - - 240
4. On the Function of the Thyroid Body. By Dr. Peter Martyn. - 241

### Organic Chemistry.

5. Method of Clinically Determining the Amount of Sugar in Diabetic Urine. By Dr. Garrod. - 242
6. Mode of Detecting Sugar in the Urine, and on the Different Nature of certain forms of Diabetes. By Dr. A. Becquerel. - - 243
7. On the Presence of Sugar in the Urine of Pregnant, Parturient, and Puerperal Women. By Theodore Kirster. - - - 244
8. On the Elimination of Sulphuretted Hydrogen by the Lungs. By M. Cl. Bernard. - - - 245
9. Starch from the Animal Kingdom. By Dr. Pavy. - - 246
10. On the Immediate Principles of Human Excrements in the Healthy State. By Dr. W. Marcet. - - - - - - - 248

### Materia Medica and Pharmacy.

11. Permanganate of Potash as a Caustic, Deodorant, and Stimulant. By Dr. D. F. Girwood. - 249
12. On the Oriental Bath. By Dr. Haughton. - - - - - 249
13. On the Preparation of Valerianate of Ammonia of Definite Composition. - - - - - 252
14. Formula for a Liquor Cinchonæ to replace the Wine of Bark. By M. Deschamps. - 253
15. Formulæ for the Gelatinization of Cod-liver Oil. - - 253
16. Caustic Glycerine in Lupus. By Dr. Hébra. - - - - 253
17. On a Mode of Improving Cow's Milk and rendering it more easy of Digestion for Healthy and Diseased Children. By Dr. Gumprecht. - - - - - - 254
18. Mode of Preparing the Bran Loaf for the Use of Diabetic Patients. By Mr. J. M. Camplin. 254
19. The Chemical Properties of the Potato, and its uses as a general article of commerce, if properly manipulated. By Mr. J. W. Rogers. - - - - 255

### Medical Pathology and Therapeutics, and Practical Medicine.

20. Case of Marshall Hall, with the Post-mortem Appearances. 255
21. Hæmophilia. By Dr. Magnus Huss. - - - - - - 259
22. On some of the Prevalent Errors in relation to the Predisposition to Hysteria. By M. Briquet. - - - - - - 261

PAGE
23. Asphyxia of Submersion. By Mr. A. T. H. Waters. - - 262
24. Asiatic Cholera and its Prevention. By Henry McCormac, M. D. - - - - - - 263
25. Nature, Causes, Statistics, and Treatment of Erysipelas. By Peter Hinckes Bird, F. R. C. S. 264
26. Action of Cod-liver Oil in Chest Diseases. By Dr. E. Smith. - 264
27. Injections of the Bronchi in Pulmonary Diseases. By Dr. J. H. Bennett. - - - - - 265
28. Treatment of Phthisical Vomiting by Local Anæsthesia. By Mr. Atcherley. - - - 266
29. Chloroform in Intermittent Fever. By M. Delioux. - - 266
30. Belladonna in Incontinence of Urine. By Mr. Pollock. - - 267

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

31. Embolic Apoplexy from Detachment of Fibrinous Coagula in an Aneurism of the Carotid. By Dr. Fr. Esmarch. - - 267
32. Case of Arterio-Venous Aneurism, which was treated by Ligature of both the Artery and the Vein. By Mr. Moore. - 268
33. Revision of the Doctrine of Dislocation. By Prof. Roeser. 269
34. Luxation of the Os Coccygis. By Dr. Roeser. - - - 270
35. On the Prevention of the Ill-consequences of Operations. By Prof. Deroubaix. - - - 271
36. Amputation of the Knee-joint, leaving the Articular Surface entire. By Mr. Lane. - - 272
37. Results of the Operation of Tracheotomy performed for Croup at the Children's Hospital, Paris, during the year 1856. By M. André. - - - - 272
38. Treatment of Hemorrhoids. By Dr. Van Holsbeek. - - 273
39. The present State of Surgical Science in reference to Cancer and its Treatment. By Mr. Hird. 273
40. Escharotic Treatment of Cancer. By Prof. James Syme. - 274
41. Epithelial Cancer. By Mr. Henry Thompson. - - - 276
42. Foreign Bodies introduced into the Bladder. By M. Denucé. - 277

OPHTHALMOLOGY.

43. Spasms of the Eye after Extraction of Cataract. By Mr. White Cooper. - - - - 279
44. Diphtheritic Ophthalmia. By M. Gilbert. - - - - 280
45. Two Cases of Strabismus and very Imperfect Vision—Operation and Cure. By Mr. Critchett. 281

MIDWIFERY.

46. Quadruplet Births. By Mr. French. - - - - - - 282
47. A New Symptom of Rupture of the Uterus. By Dr. McClintock. - - - - - - 283
48. Two Cases of Hernia of the Ovaries, in one of which there was Periodical Enlargement of one or other of these Organs. By Henry Oldham. - - - 284

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

49. Suicide and Intoxication by Chloroform. By M. Chereau. - 286
50. Death from Chloroform. By Mr. C. Heath. - - - - 288
51. Poisoning by Twelve Drachms of Laudanum; Recovery. By Dr. G. C. Gibb. - - - 288
52. Acute Poisoning by Phosphorus. By Dr. Th. Nitsche. - 288

## AMERICAN INTELLIGENCE.

### Original Communications.

PAGE

Encephaloid Tumour weighing ten pounds, involving the Right Kidney of a Boy four years old. By M. Shepherd, M. D. - - - 291

Case of Compound Fracture of the Skull, with Laceration and Loss of a Portion of Brain, and Compression; Recovery. By D. J. McRae, M. D. - - - - 293

Confection of Cinchona as an Antiperiodic. By D. S. Gloninger, M. D. - - - - - 293

Case of Monstrosity. By John H. Hunter, M. D. - - - - 294

### Domestic Summary.

Fracture of the Neck of the Femur; Bony Union. By Dr. Gay. 294

Disarticulation and Removal of nearly the Lateral Half of the Lower Jaw. By Dr. C. E. Isaacs. 295

Simultaneous Dislocation of both Shoulder-Joints. By Dr. Wm. H. Van Buren. - - - 295

Anomalous Situation of the Left Kidney. Dr. C. E. Isaacs. - 295

Gun-shot Wound of Bladder; Recovery. By Dr. R. H. Grinstead. 295

Chlorate of Potash in Stomatitis Materna. By Dr. L. Faulkner. 296

Iodide of Potassium in Leucorrhœa. By Dr. Jos. B. Payne. 296

Application to Sore Nipples. - 296

Statistical Table, exhibiting the Mean Height of American Recruits. By Dr. Thos. Lawson. 296

Ovariotomy. By Dr. Gay. - - 296

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## Art. I.—*Observations on the Causes, Effects, and Treatment of Perforation of the Membrana Tympani.* By Edward H. Clarke, M. D., Professor of Materia Medica in Massachusetts Medical College.

The following paper is founded on fifty-two carefully recorded observations of disease of the ear, accompanied with perforation of the membrana tympani. My object in bringing these observations together, and comparing them with each other, is to investigate the causes, course, effects and treatment of perforation of the membrana tympani; or, to investigate diseases of the ear from the point of view of perforation of the membrane.

It is my hope that the result of this investigation will not be altogether devoid of interest for general practitioners. For, we shall find by an analysis of the subjoined cases, that the diseases which are most likely to produce perforation of the membrana tympani come almost altogether under their observation; and, moreover, that the most successful treatment of perforation, viz., the prophylactic, can be conducted by such practitioners as well as by specialists.

The following observations were made on private patients, and were recorded either immediately after the examination, or at the time of it. They were made in a clear sunlight, and by the aid of Meniere's speculum auris, or of the tubular speculum of Mr. Toynbee. The existence of perforation was demonstrated, in a majority of the cases, by the patient's blowing air, with a whistling rale, through the hole and out of the external meatus; or, when this could not be accomplished, by the use of the Eustachian catheter, or an examination of the perforation with a probe.

M. E. Triquet, in a late memoir,[1] has well observed that "the affections of the auditory apparatus are not so isolated as to be altogether unlike other lesions of the organism." This remark is true of the particular lesion which I propose to examine at the present time. For perforation is not so much a disease in itself as the result of disease. And moreover, the diseases which are the antecedents or causes of this lesion affect, for the most part, the whole organism primarily; the auditory apparatus only secondarily.

Mr. Wilde, in his excellent work on Diseases of the Ear, closes an elaborate discussion of affections of the membrana tympani with the following remark: "Moreover, from the circumstance of the membrana tympani being the part most easily examined, being that most frequently affected, and consequently affording the safest means for diagnosis either for deafness arising from affections peculiar to itself, and confined to its own structure, or which it exhibits in common with other and deeper seated structures similarly diseased, it frequently affords us not only the surest but the only faithful indication for forming an accurate diagnosis."[2] This statement is both an inducement and a reason for general practitioners to study the affections of the membrana tympani. Of these affections, and arising from various causes, perforation is one of the most easily ascertained, one of frequent occurrence, and of disastrous consequences to the hearing.

Before examining the phenomena of perforation, it may be well to allude to the appearance, position, structure, and importance of the membrana tympani. It stretches across the inner extremity of the external meatus, separating the latter from the cavity of the tympanum. It is a delicate, translucent, opaline, or nearly colourless membrane. Occasionally it has a grayish tint, but more generally it presents a clear and brilliant hue. Its surface is irregularly curved and divided into two portions by the handle of the malleus. It sometimes happens that a ray of sunlight, striking upon some of these irregularities, gives the appearance of a perforation when none exists. Hence some caution must be exercised in deciding upon the existence of a perforation at first sight. What appears to be a hole may be only the reflection of a ray of light.

In the healthy state no bloodvessels can be seen in the membrane. Anatomists, however, tell us that they are easily made visible by a fine injection. They are often greatly enlarged by disease, and then give to the membrana tympani a bright red appearance. When a perforation heals, a circle of red vessels can often be seen around the circumference of the hole. I have frequently verified the remark of Mr. Wilde that, "when the membrana tympani has been perforated, a globule of air or a mucous bubble, entangled in the aperture, pulsates synchronously with the heart and arteries."[1] This pulsation is produced by the beating of the tympanal vessels.

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[1] Recherches Pratiques pour servir à l'Histoire des Maladies de l'Oreille, par M. E. Triquet.

[2] Wilde's Aural Surgery, p. 310, Lond. ed. [p. 298, American edition. Phila., 1853.]

It is important for us to remember that the membrana tympani is not an essential part of the auditory apparatus. A perforation through it interferes with its function and impairs the hearing, but does not necessarily destroy the latter. If the membrane is perforated, but not otherwise diseased, and the other parts of the ear are uninjured, the hearing power may be only slightly diminished. I have met with persons, carrying an aperture in the membrana tympani of the size of half a pea, who could hear ordinary conversation with ease. But this is not usually the case. A perforation is generally the result of disease, which has seriously affected other tissues of the ear besides the tympanal membrane, and by which the hearing is much diminished. In some instances the diminished hearing amounts to complete cophosis. In nearly all cases, the degree of deafness is such as to render perforation a most unfortunate termination of disease of the ear. The membrana tympani not only contributes to delicacy of hearing, but it serves to protect the cavity of the tympanum. Whenever it is perforated, the cavity below is exposed to changes of temperature, moisture, and other deleterious influences, and hence is much more likely to become diseased. Otorrhœa is often kept up simply by the existence of a perforation.

Let us now proceed to an examination of the cases themselves. The accompanying table, which is drawn up from my notes, presents an abstract of all the cases of which I have an exact record. Some of them will be referred to more in detail hereafter.

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[1] Wilde's Aural Surgery, London edition, p. 218 [p. 216, American edition. Phila., 1853.]

*Tabular View of Perforations*

| No. | Sex. | Age. | General health. | Throat and tonsils. | Cervical glands. | State of external meatus. | Cavity of the tympanum. | Foreign growths. | Otorrhœa: quality and quantity. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | M. | 50 | Good | Normal | Healthy | White, with deficient wax | Ignorant | None | None |
| 2 | M. | 3 | Good | Normal | Enlarged | Secreting moderately | Red and congested | None | Copious, viscid, and offensive; muco-purulent |
| 3 | M. | 10 | Good | Normal | Ig. | White and hard | A suppurating surface | Fungus | Copious; thick; offensive |
| 4 | F. | 6 | Good | Normal | Ig. | Healthy | Red and congested | None | Slight; fetid; waxy |
| 5 | F. | 32 | Good | Normal | Ig. | White, hard, and dry | Ignorant | None | None |
| 6 | M. | 9 | Good | Normal | Ig. | White and no wax | Red | None | Slight, and of a mucous character |
| 7 | M. | 16 | Good | Throat healthy; tonsils slightly enlarged | Normal | White, hard, and dry | Red and moist | Polypus | Moderate; muco-purulent; curdy |
| 8 | M. | 10 | Delicate | Tonsils enlarg'd; throat healthy | Enlarged | Right, white and dry; left, red and swollen | Ignorant | None | Right ear none; left ear purulent; bloody; offensive |
| 9 | F. | 23 | Good | Ignorant | Ig. | Lined with crusts; no wax | Ignorant | Polypus in left meatus | Right ear none; left ear slight |
| 10 | M. | 23 | Average | Tonsils natural; fauces red and granulated | Diseased; suppuration | R., white, dry, hard; L. red and secreting | R., of a pale pink; L., secreting | Fungus | Right ear none; left ear muco-purulent |
| 11 | F. | 10 | Average | Tonsils enlarg'd; throat red and granulated | Swollen | Both white and hard | Red, swollen and secreting | None | Copious and offensive, and thick |
| 12 | F. | 45 | Good | Normal | Healthy | White and dry | Ignorant | None | None |
| 13 | M. | 12 | Good | Tonsils enlarg'd; throat congested | Normal | Red near mem. tym.; sufficient wax; white elsewhere | Red and congested | None | Copious; offensive; muco-purulent. |
| 14 | F. | 18 | Good | Normal | Normal | Right, white and no wax; left healthy | R., secreting; L., dry | None | Moderate and offensive in right ear; none in left |
| 15 | M. | 5 | Delicate | Throat congested; tonsils enlarged | Normal | White, smooth; no wax | Red; congested; secreting | None | Copious; thick; offensive |
| 16 | M. | 7 | Delicate | Throat healthy; tonsils enlarg'd | Normal | White; no wax | Red | None | Slight; thin; mucous |
| 17 | F. | 5 | Good | Normal | Normal | White; deficient wax | Red and congested | None | Copious; offensive; thick |
| 18 | F. | 12 | Good | Normal | Normal | White; deficient wax | Pink and clean | None | Slight; mucous |
| 19 | M. | 7 | Good | Throat healthy; tonsils enlarg'd | Enlarged | White; no wax | Red; congested | Fungus | Copious; fetid; yellowish |
| 20 | F. | 9 | Delicate | Throat red; tonsils enlarged | Normal | A little red; no wax | Pink and smooth | None | Moderate; mucous |
| 21 | M. | 32 | Good | Throat red; tonsils ignorant | Ig. | Reddened; no wax | Red and congested | None | Moderate; offensive |
| 22 | F. | 14 | Good | Throat red and congested; tonsils enlarged | Enlarged | Red and no wax | Congested | Fungus | Copious; purulent; thick; bloody |
| 23 | F. | 10 | Good | Ignorant | Ig. | Red; no wax | R., ig.; L., secreting | Polypus | Copious; offensive; cheesy |
| 24 | F. | 5 | Good | Tonsils enlarg'd; throat red and congested | Normal | Red and swollen | Red | None | Moderate; offensive; mucous |
| 25 | F. | 8 | Good | Tonsils enlarg'd; throat red and congested | Enlarged | Red and swollen | Red; granulated; secreting | None | Moderate; white; offensive |
| 26 | M. | 24 | Good | Normal | Normal | White, and sufficient wax | Ignorant | None | None |

*of the Membrana Tympani.*

| One or both ears perforated. | Size and shape of perforation. | Following what. | Position of perforation. | How long existed. | First symptoms. | Treatment. | Result. |
|---|---|---|---|---|---|---|---|
| Left | Size of a pea | Ignorant | Ignorant | 30 yrs. | Ignorant | None | Not healed |
| Both | Size of half a pea | Scarlatina | Ignorant | 5 mos. | Otorrhœa | Syringe; astringents; counter-irritation | Not healed |
| Both | Membrana destroyed | Scarlatina | Whole of m. tym. | 8 yrs. | Otorrhœa | Astringents; iron and iodine internally | Not healed |
| Both | Size of end of probe | Scarlatina | Ignorant | 8 mos. | Otorrhœa | Syringe; astringents; counter-irritation | Not healed |
| Left | Size of pea | Ignorant | Ignorant | 16 yrs. | Otorrhœa with pain | None | Not healed |
| Both | ⅔ of memb. tym. destroyed | Scarlatina | Ignorant | 6 yrs. | Otorrhœa | None | Not healed |
| Both | Size of a pea | Scarlatina | Central | 10 yrs. | Otorrhœa and deafness | Syringe and astringents | Not healed |
| Both | Right, end of probe; left, mem. tym. half destroy'd | Pneumonia | R., below malleus; L., central | 7 yrs. | Otorrhœa and afterwards pain | Astringents; syringe; iron and iodine internally | Ignorant |
| Both | Both size of a pea | Scarlatina | Central | 17 yrs. | Otorrhœa and deafness | Astringents, and extraction of growth | Not healed |
| Both | Right, size of a pea; left, ig. | Typhus fever | R., upper; L., ignorant | 18 yrs. | Deafness; after many years otorrhœa | Extraction of fungus; astringents | Not healed |
| Both | R., mem. tym. ⅔ destroyed; L., size of half a pea | Scarlatina | Central | 4 yrs. | Otorrhœa | None | Not healed |
| Right | Size of end of probe | Ignorant | Central | 6 yrs. | Deafness | None | Not healed |
| Both | Half of mem. tym. destroyed | Scarlatina | Inferior | 6 yrs. | Otorrhœa and deafness | Syringe; astringents; attention to general health | Not healed |
| Both | Right, end of probe; left, half a pea | Scarlatina | Central | 12 yrs. | Otorrhœa | Syringe | Not healed |
| Right | Nearly whole of mem. tym destroyed. | Scarlatina | Central | 18 mos. | Otorrhœa | Syringe and astringents | Not healed |
| Both | Size of half a pea | Ignorant | Superior | 3 yrs. | Otorrhœa with otalgia | Syringe; attention to general health | Not healed |
| Both | Right, size of a pin's-head; L., half pea | Scarlatina | Right, in centre; left, inferior | 2 yrs. | Otorrhœa | Syringe; attention to general health | Not healed |
| Both | R., size of pea, L., half a pea | Scarlatina | Central | 2 yrs. | Otorrhœa | Syringe, p. r. n. | Not healed |
| Both | Nearly all of mem. tym. destroyed | Scarlatina | Central | 3½ yrs. | Otorrhœa | Syringe; caustic; astringents, &c. | Not healed |
| Left | Nearly all of mem. tym. destroyed | Ignorant | Central | 3 yrs. | Otorrhœa | Syringe and astringents | Not healed |
| Both | R., size of half pea; L., pea | Scarlatina | R., inferior; L., central | 15 yrs. | Otorrhœa | Syringe, p. r. n.; counter-irritation | Not healed |
| Both | Both size of a pea | Scarlatina | Central | 11 yrs. | Otorrhœa | Syringe; astringents; constitutional | Not healed |
| Left | Size of half pea | Scarlatina | Central | 5 yrs. | Otorrhœa | That of polypus | Not healed |
| Left | Size of half pea | Teething | Central | 4 yrs. | Otorrhœa | Syringe; astringents; counter-irritation; constitutional | Not healed |
| Left | Ignorant | Ignorant | Ignorant | 7½ yrs. | Otorrhœa | Syringe; astringents; counter-irritation | Not healed |
| Left | Ignorant | Pneumonia | Ignorant | 3 yrs. | Otorrhœa and deafness | None | Not healed |

*Tabular View of Perforations of*

| No. | Sex. | Age. | General health. | Throat and tonsils. | Cervical glands. | State of external meatus. | Cavity of the tympanum. | Foreign growths. | Otorrhœa: quality and quantity. |
|---|---|---|---|---|---|---|---|---|---|
| 27 | M. | 18 | Delicate | Ignorant | Normal | Reddened; no wax; crusts | Ignorant | None | Variable; offensive; bloody |
| 28 | F. | 24 | Delicate | Tonsils enlarg'd; throat congest'd | Enlarged | Eczematous eruption | Ignorant | None | None at time of examination |
| 29 | F. | 32 | Good | Healthy | Normal | White and with wax | Ignorant | None | None |
| 30 | F. | 22 | Good | Normal | Normal | Slightly red | Congested | None | Moderate; offensive; thick |
| 31 | F. | 50 | Good | Normal | Normal | Right, red; left, white | Ignorant | None | Slight; mucous |
| 32 | M. | 38 | Good | Normal | Normal | Slightly red; no wax | White and hard | None | None |
| 33 | F. | 18 | Good | Normal | Normal | White; no wax | Congested | Fungus | Moderate; offensive; mucous |
| 34 | M. | 18 | Good | Tonsils normal; throat red | Normal | White and hard; wax dry | White and dry | None | None |
| 35 | M. | 35 | Good | Normal | Normal | Right, white and hard; left, red | R., congested; L., do. | Polypus in right ear | Copious and offensive in left; mucus in right |
| 36 | F. | 19 | Good | Normal | Normal | White; wax deficient | Ignorant | None | None |
| 37 | F. | 11 | Good | Normal | Normal | Right, red and no wax; left, white and wax | R., ig.; L., pale | None | Right, muco-purulent and slight; left, none |
| 38 | F. | 14 | Good | Normal | Normal | Red and no wax | Light red | None | Moderate; offensive and thick |
| 39 | F. | 16 | Good | Normal | Normal | Reddened; deficient wax | Ignorant | None | Slight; muco-purulent |
| 40 | M. | 12 | Good | Normal | Normal | White and little wax | Congested | R. none; L. fungus | Slight; offensive; thick |
| 41 | M. | 30 | Good | Normal | Normal | Red; no wax | Ignorant | None | Slight and bloody |
| 42 | F. | 25 | Good | Tonsils healthy; throat congest'd | Enlarged | White; deficient wax | Ignorant | None | Slight; mucous |
| 43 | F. | 20 | Good | Ignorant | Ig. | Swollen, tender, painful | Inflamed | None | Moderate; viscid |
| 44 | M. | 35 | Good | Fauces red; tonsils normal | Ig. | Red and dry; no wax | Inflamed | None | None |
| 45 | M. | 26 | Good | Normal | Normal | White and dry; no wax | Ignorant | Polypus | White; purulent; offensive |
| 46 | M. | 44 | Good | Ignorant | Ig. | Red near mem. tym.; no wax | Ignorant | Fungus | Slight; mucous |
| 47 | M. | 28 | Good | Ignorant | Ig. | Red and tender; no wax | Ignorant | None | Moderate; viscid |
| 48 | M. | 23 | Good | Normal | Normal | Red | Ignorant | None | Moderate; mucous |
| 49 | M. | 26 | Good | Throat red and congested; tonsils normal | Normal | Red | Ignorant | None | Ignorant |
| 50 | M. | 45 | Good | Normal | Normal | Red and no wax | Inflamed | None | Moderate; purulent |
| 51 | M. | 6 | Good | Throat congested; tonsils enlarged | Normal | Red and tender; no wax | Ignorant | None | Copious; offensive; purulent |
| 52 | M. | 38 | Good | Ignorant | Ig. | Red and swollen; no wax | Ignorant | None | Moderate; muco-purulent |

*the Membrana Tympani*—Continued.

| One or both ears perforated. | Size and shape of perforation. | Following what. | Position of perforation. | How long existed. | First symptoms. | Treatment. | Result. |
|---|---|---|---|---|---|---|---|
| Both | Ignorant | Ignorant | Central | 16 yrs. | Otorrhœa | None | Not healed |
| Right | Ignorant | Eczema | Ignorant | 2 mos. | Eczema | Syringe; local soothing applications | Not healed |
| Right | Size of half pea | Ignorant | Central | 18 mos. | Pain and then otorrhœa | None | Not healed |
| Both | ⅔ of memb. tym. destroyed | R., cold water injection; L., scarlatina | Central | R. 1½ y.<br>L. 20 y. | R., pain and otorrhœa; L., otorrhœa | Syringe; counter-irritation; astringents | Not healed |
| Both | Ignorant | R., a cold; L., ig. | Central | R., 3 w'ks; L., 45 yrs. | R., pain, tenderness, and otorrhœa; L., ignorant | Syringe; leeches; counter-irritation | Not healed |
| Left | Memb. tymp. entirely destroyed | Ignorant | M. tym. absent | 30 yrs. | Otorrhœa | None | Not healed |
| Left | Memb. tymp. nearly destroyed | Scarlatina | Central | 16 yrs. | Otorrhœa | Caustic to growth, and astringents | Not healed |
| Right | Mem. tym. ⅔ destroyed | Ignorant | Central | 8 yrs. | Otorrhœa and otalgia | None | Not healed |
| Both | Both memb. tymp. nearly destroyed | Violent syringing, probably | Central | 6 yrs. | Pain and then otorrhœa | Polypus extracted; caustic | Not healed |
| Left | Size of pin's-head | Cold | Over malleus | 9 mos. | Pain | None | Not healed |
| Both | Right, oblong, 1-16 in broad; left, half pea | Measles | R., anterior; L., central | 9 yrs. | Otorrhœa | None to left ear; caustic to right, and syringe | Not healed |
| Right | Mem. tym. ⅔ destroyed | Measles | Central | 6 yrs. | Otorrhœa | Astringents; syringe | Not healed |
| Left | Size of half pea | Ignorant | Inferior | 2 yrs. | Otorrhœa | Counter-irritation and constitutional; syringe | Not healed |
| Both | R., ½ memb. tymp.; L,. ⅔ memb. tymp. gone. | Pertussis | Central | 7 yrs. | Otorrhœa | Syringe; caustic to fungus | Not healed |
| Left | Size of end of probe; circular | Puncture of M. T. by accident | Ignorant | 11 dys. | Pain; tenderness; bloody discharge | Syringe; astringents; cathartic | Healed |
| Left | Oblong; superior | Ignorant | Superior | 2 mos. | Otalgia; otorrhœa | Syringe | Healed |
| Right | Ig.; small | Cold | Superior | 3 wks. | Otalgia; otorrhœa | Leeches; blisters; cathartics; syringe | Healed |
| Left | Ig.; small | Salt water bathing | Anterior | 1 wk. | Otalgia and tinnitus | Counter-irritation; cathartics; diet | Healed |
| Right | Large | Ignorant | Ignorant | 3 yrs. | Otalgia; otorrhœa | None | Healed |
| Left | Small; an oblique slit; size end of probe | Ignorant | Ignorant | 6 mos. | Otorrhœa and otalgia | Syringe; caustic; constitutional | Healed |
| Left | Small; ig. | Cold | Ignorant | 2 wks. | Otalgia; tenderness; otorrhœa | Blisters; syringe | Healed |
| Left | Size, end of probe | Ignorant | Inferior | 2½ mos. | Otalgia; tennerness; otorrhœa | Leeches; blisters; caustic | Healed |
| Right | Ignorant | Scarlatina | Ignorant | 8 to 10 yrs. | Otorrhœa | None | Healed |
| Right | Size of grain of wheat | Cold | Inferior | 3 wks. | Pain; tenderness; otorrhœa | Leeches; syringe; counter-irritation; diet | Healed |
| Left | Size of end of probe | Cold and eczema | Inferior | 4 dys. | Otalgia; otorrhœa | Syringe; counter-irritation; cathartics | Healed |
| Left | Oblong | Syringing | Superior | 6 dys. | Otalgia; swelling; tenderness | Leeches; cathartics; blisters; diet | Healed |

Of these fifty-two cases, it appears that twenty-eight were males, and twenty-four females. The preponderance of the former over the latter is not large enough to show that one sex is more liable than the other to perforation. In a large majority of the cases, the general health was reported good: that is, forty-six considered themselves to be, or their friends reported them to be in good health. Six are recorded to have delicate health. This statement, of course, refers to their condition at the time they applied for advice; not to their condition at the commencement of the disease.

The state of the cervical glands, and of the throat and tonsils, was not so satisfactory, in these cases, as that of the general health. Thus the cervical glands are recorded as healthy or normal in 31 cases; as enlarged or otherwise affected in 9; and in 12 cases their condition was not noticed. Hence we perceive that in more than one-sixth of the cases the glands of the neck were diseased. The fauces appear to have been healthy in 30 cases, or more than one-half; and to have been affected in 15, or nearly one-third. In 7 cases no record of the state of the throat was made. The tonsils were enlarged in 13 cases, or exactly one-fourth; they were healthy in 31 cases, or more than one-half. Their condition in the remaining 8 cases was not recorded. If we neglect the unrecorded instances, we find the condition of the throat to be stated in 45 cases; of the tonsils in 44; and of the cervical glands in 40. In 15 of the 45, the throat was affected, or exactly one-third. In 13 of the 44, the tonsils were enlarged, or about four-elevenths. In 9 of the 40, the cervical glands were affected, or about one-fourth. We cannot infer from this that enlargement of the cervical glands, or tonsils, or disease of the throat especially predisposes to disease of the ear, inducing perforation; but we can infer that when disease of the ear appears in individuals of a scrofulous diathesis there is greater danger of perforation than in those of a healthier organization.

Now if we compare diseases of the ear complicated with perforation of the membrana tympani with all aural diseases, we shall obtain the following result, at least so far as my own observations go. I have records of 298 cases of disease of the ear. In 52 of these cases (which serve as a basis for the present paper), one or both membrana tympani are perforated. There are a large number of other cases which have come under my observation, and of which there is no record. But as I have made no selection of cases to record, it is not probable that the proportion of those with perforation to the total number would be materially changed by adding the unrecorded ones. Comparatively, as many of one kind were not recorded as of another. The above figures (52 and 298) show that 0.17, or nearly $\frac{1}{5}$ of all diseases of the ear, produce perforation of the external membrane.

Before examining the condition of the external meatus and the cavity of the tympanum, let us ascertain the number of perforations in the above mentioned 52 cases. It appears from the table, that the right membrana tympani was perforated alone, 10 times; the left, alone, 19 times; and both membranes were perforated 23 times. Adding 23 to the right and left single perforations, we find that the right membrane was perforated 33 times, and the left, 42 times. This makes an aggregate of 75 perforations (in the 52 cases). Hence, it would seem that the left ear is somewhat more likely to suffer from perforation than the right. As the total number of single perforations is 29, and of double ones 23, it appears that in aural affections, inducing perforation, there is great danger to both ears.

Let us next look at the condition of the external meatus. It appears from the table, that the meatus presented a healthy appearance with an average amount of wax only in 6 instances (out of the 75). In 6 cases, the walls of the meatus were red and swollen. In 31 cases, they were more or less red, without swelling. And in 32 cases, they where white and hard, without any cerumen or with a deficiency of it. In this statement of the condition of the walls of the meatus, no regard is paid to the presence or absence of otorrhœa. Polypus or fungous growths existed in 12 instances. In the remaining 63 cases, there were no such growths. Otorrhœa was present in 60 out of the 75 perforations, or in exactly four-fifths of them. In 14, it did not exist; and in one instance no record was made with regard to any discharge from the ear.

It is an important remark that (in many instances) the above mentioned abnormal condition of the meatus, the existence of otorrhœa, and probably also of foreign growths, were consequences indirectly of perforation. For, when the tissues of the membrana tympani have been eaten through by ulceration, the hole is apt to continue, after the cause which led to it has ceased to operate. The destruction of even a small portion of the membrane exposes the cavity within, of which it forms the natural protection, to the direct influence of atmospheric changes, such as cold, moisture, etc. The effect of such exposure is to keep up a muco-purulent discharge from the mucous membrane of the cavity. The walls of the meatus are bathed and irritated by the otorrhœa. They become red, and swollen, and tender; or hard, cartilaginous, and insensible. The secretion of wax is interfered with or destroyed. If the otorrhœa is copious and neglected, polypus or fungus is often engendered from the sides of the meatus or the cavity of the tympanum. Unfortunately, these consequences of perforation sometimes become additional causes of disease, and the lesions which they lead to may assume the gravest character, and implicate life itself. Under the best conditions, an individual with perforation will have imperfect hearing. But these observations go to show that the chance of escaping, after an aperture into the drum of the ear has been established by disease, with imperfection of hearing and without other lesions, is very slight. In only 6 cases out of the 75 was the external ear healthy—a proportion of less than one-twelfth.

The condition of the cavity of the tympanum was not recorded in these cases so carefully as that of the meatus. In 27 cases, the appearance of the mucous membrane is not stated. In 2 it presented a rough and white surface, not unlike a dense white membrane. In 14 it was pale red, and more or less moist. In 32, it was inflamed, considerably congested, and of a bright red colour. The state of the cavity leading to the white appearance just referred to, does not often exist. In this series of cases, it occurred only twice. When it does occur, I am inclined to regard it as the most favourable termination of any aural affection complicated with perforation, except the closing of the aperture, and the consequent restoration of the membrane to a normal state. In these two cases, there was no otorrhœa. The walls of the meatus were free from redness or tenderness, though there was a deficiency of cerumen. In one of these instances, the hearing was almost entirely destroyed; in the other it was only moderately impaired. The patients, on the whole, were in a much more comfortable condition than generally falls to the lot of those suffering from perforation. Where neither this result is attained, nor the aperture healed, the next best termination is that represented by the 14 cases, in which the mucous membrane of the cavity was of a pale red colour and somewhat moist. In such cases, there is no congestion of the cavity. There is usually no discharge; and when there is any, it is of a mucous character. The patient is occasionally troubled with otorrhœa, particularly on taking cold, but the discharge is of short duration. Excepting a greater or less degree of imperfection of hearing, he is not much annoyed by the condition of his ears. The last group of 32 cases represents the state of the cavity which is most apt to exist with perforation. The mucous membrane in these cases was red and congested. Occasionally it was pushed through the aperture like a fungus, and not unfrequently it poured out a copious and disagreeable purulent secretion.

The size of the aperture is the next point of inquiry. In 12 cases, the table contains no record of the size. In 4 cases, the hole was only an oblong slit. In 38 cases its size varied from that of a pin's head to that of a pea. In 21 cases, the membrana tympani was one-half destroyed, or wholly destroyed. With a single exception all the apertures that healed were small, being only about the size of the end of a probe. One large one only closed up.

The table contains no reference to the condition of the hearing in the cases under consideration. By examining my notes, however, the following result is obtained: Assuming the ticking of my watch as the measure of the hearing distance, it appears that in 6 cases my watch was not heard at all. In 11 cases, it was heard only on the pavilion of the ear. In 23 cases, it was heard from the pavilion to a distance of six inches. In 16 cases, the hearing distance varied from six inches to one foot; in 15 cases, from one to two feet; and in 4 cases, from two to four feet. Where the membrane was perforated on both sides, the hearing distance was of course measured for each ear separately; when only the membrane of one side was perforated, means were taken to prevent the healthy ear from hearing the watch during the examination. The above statement gives the hearing distance at the time when patients applied for relief. In many instances, even when the aperture did not heal, the hearing improved after treatment, by which congestion or inflammation, or other morbid condition of the ear was relieved. The ticking of my watch can generally be heard distinctly by the healthy ear, in the daytime, a distance of about fourteen or sixteen feet. Comparing this distance with the various hearing distances just given, we can form some notion of the degree of deafness which generally attends perforation. In 56 of the 75 cases, the hearing distance was a foot or less; and in 40 cases, it was six inches or less. This statement confirms a remark previously made, that perforation is a most unfortunate termination of disease of the ear, but it also shows that an aperture through the membrana tympani by no means destroys the hearing.

Let us now return to an examination of the table. A comparison of the column which gives the age of the patients at the time they applied for relief, with the one which gives the duration of the disease, will enable us to ascertain the age at which the disease commenced. By such a comparison, the following result is obtained: The affection inducing perforation commenced between the ages of six months and one year, in one case only; between the ages of 1 year and 10 years, in 28 cases; between the ages of 10 and 20 years, in 6 cases; and between the ages of 20 and 50 years, in 17 cases. Hence, it appears that the period of life most obnoxious to this difficulty, is that of early childhood, or that between the ages of 1 and 10 years. More than half of all the cases, or 28 out of 52, commenced at this period. The reason of this is to be found in the fact that the exanthemata and other diseases of the general system which are apt to be followed by aural affections, occur most frequently in childhood.

The length of time which elapsed before the patients applied for relief is a curious illustration of the common notion that diseases of the ear may be safely neglected. In only 7 cases out of the 52 had the disease continued less than a month before medical advice was sought. In 4 cases, it had continued from 1 month to 6 months; in 3 cases, from 6 months to 1 year; in 25 cases, from 1 year to 10 years; in 9 cases, from 10 to 20 years; and in 4 cases, from 20 to 40 years. In some of these instances the patients had applied to other physicians before calling upon myself, but in by far the largest proportion they had not done so.

The causes of perforation are various. "It may exist congenitally," says Mr. Wilde,[1] and "it may happen by accident, such as a penetrating instrument, a foreign body in the meatus, loud sudden noises, sneezing, coughing, or blowing the nose, diving to any great depth, falls, and blows upon the head. An ulcer may eat its way through, and leave from loss of substance a permanent opening; but the most frequent cause of perforation is otitis, or inflammation of the membrane in common with the lining of the cavitas tympani." Our present series of cases confirms this remark. An examination of the table shows that perforation followed

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[1] Aural Surgery, p. 298, Lond. ed. [American edition, p. 287.]

| | | | | | | |
|---|---|---|---|---|---|---|
| Scarlatina | in | 18 | cases, | producing | 33 | perforations. |
| Cold | “ | 6 | “ | “ | 6 | “ |
| Syringing the ear | “ | 3 | “ | “ | 4 | “ |
| Measles | “ | 2 | “ | “ | 3 | “ |
| Pneumonia | “ | 2 | “ | “ | 3 | “ |
| Typhus Fever | “ | 1 | case | “ | 2 | “ |
| Pertussis | “ | 1 | “ | “ | 2 | “ |
| Eczema | “ | 1 | “ | “ | 1 | perforation. |
| Puncture | “ | 1 | “ | “ | 1 | “ |
| Salt-water bath | “ | 1 | “ | “ | 1 | “ |
| Teething | “ | 1 | “ | “ | 1 | “ |
| Unknown disease | “ | 15 | cases | “ | 18 | perforations. |
| | | 52 | | | 75 | |

It appears from this that in 15 cases, the disease which led to perforation, or which preceded it, was unknown. In 20 cases the disease was measles or scarlatina; that is nearly two-fifths of the perforations were produced directly or indirectly by the exanthemata; or if we exclude the 15 unknown cases from the calculation, we find that the exanthemata led to perforation in 20 cases out of 37, a proportion of 0.54, or more than one-half. Next to the exanthemata, cold ranks as the most frequent antecedent of perforation. Then comes improper syringing the ear, pneumonia, typhus fever, &c.

The importance of knowing the first symptoms of approaching perforation, or of any disease which may lead to it, is obvious. By referring again to the table, we learn that the earliest symptoms of the affections which finally produced perforation, were—

| | | |
|---|---|---|
| Otorrhœa alone in | 24 | cases. |
| Otorrhœa with otalgia in | 12 | “ |
| Otorrhœa with otalgia and tenderness in | 6 | “ |
| Otorrhœa with deafness in | 4 | “ |
| Otorrhœa with tinnitus in | 1 | case. |
| Deafness alone in | 2 | cases. |
| Eczema alone in | 1 | case. |
| Unknown in | 1 | “ |
| Pain alone in | 1 | “ |
| | 52 | |

From this we learn that otorrhœa alone, or in connection with other symptoms, was the first evidence of disease—the first warning of what was destined to cause perforation in 47 out of 52 cases. In only four of these cases, was there sufficient deafness accompanying the commencement of the disease to make it remembered as one of the first symptoms. In this statement we find an urgent reason for a prompt and early attention to otorrhœa, and an additional reason for condemning the let-alone practice, particularly after the exanthemata, which has been too often followed. It should not only be borne in mind that the best time to treat an otorrhœa, and to stop it, is at its commencement, but that it often is the only warning of an insidious and ulcerative affection, which may speedily eat through the membrana tympani.

The position of the perforation in these cases varies considerably. The aperture was central in 40 instances; inferior, or through the lower half of the membrane, in 9 instances; superior, or through the upper half, in 7; anterior in 2; and unrecorded in 17 instances. Those cases in which the membrane was nearly all destroyed, or two-thirds destroyed, are marked central in the table. Of course, in such cases, the point at which the membrane was first ruptured does not appear. It is my impression that the rupture generally takes place in that part of the membrane which is opposite the orifice of the Eustachian tube, whenever it is produced by the pressure of matter within the cavity, as after scarlatina. The position does not appear to exert much influence upon the process of healing. For, of the 12 apertures which were healed, three were situated inferiorly; three superiorly; one anteriorly; and five were not recorded.

Let us now look at the condition of these cases after treatment. It appears, that of the 75 apertures, 61, or 0.82 were not healed; 12, or 0.16 were healed; and in 2 cases, the result was not known. This statement refers only to the perforations. In a large number of those which did not heal, the condition of the cavity of the tympanum or meatus, or of both, was greatly improved by treatment. The hearing, also, was frequently increased by the measures which were taken to improve the condition of the ear. At the present time, however, we are more concerned with the result as to the apertures, than with the condition of the cavity of the tympanum or the neighbouring parts, at the close of treatment. Of the 33 perforations which followed scarlatina, only one was healed. That one (No. 49 in the table) had existed for eight or ten years. It closed by the efforts of nature alone. It received no treatment at the time it healed, and consequently the process of healing was not observed. Of the 6 perforations which followed exposure to cold, 4 were healed. Three of these four apertures had not existed more than three weeks, and the fourth one not more than four days before treatment was instituted. Moreover, they were all of small size. Of the 4 perforations which followed improper syringing, one was healed. This one was of small size, and subjected to treatment in five days after the commencement of the attack. Of the 3 perforations following measles, the 3 following pneumonia, the 2 following typhus fever, the 2 following pertussis, the 1 following teething, and the 1 following eczema, none were healed. Of the 18 perforations following unknown causes, 4 were healed. Of the remaining perforations which healed, 1 was caused by puncture, and 1 by salt-water bathing. The two latter were placed under treatment in less than two weeks after they occurred. Of the four, following unknown causes, one was of large size; it had existed for three years, and healed like one previously referred to, without any medical treatment. One of the remaining three arose from some aural affection which had existed for six months before medical assistance was called in; and the other two from some disease existing for two or three months.

The size of the aperture in ten of the twelve instances which terminated in a closure of the hole, was quite small, not longer than the end of a probe; in one, the aperture was large; and in one, the size was not observed. Of the sixty-one apertures which did not heal, only six were as small as the end of a probe. The remaining fifty-five were large, at least when they came under my notice. They were of the size of half a pea, or larger.

From this statement it appears that the antecedents and the size of a perforation exert a marked influence upon its healing. Perforations which are produced by, or which follow constitutional affections, seem to heal with great difficulty; while those which are produced by a local affection of the ear, alone, heal readily. Thus, out of forty-five perforations, following scarlatina, measles, pneumonia, typhus, pertussis, teething, and eczema, only one closed over. On the other hand, out of twelve perforations following exposure to cold, improper syringing, puncture of the membrane, and salt-water bathing, seven healed. The small size of the apertures which healed, contrasted with the large size of those which did not heal, confirms what we should naturally expect, that the smaller the size, other things being equal, the more readily healing can be induced. It is possible that a proper treatment, instituted sufficiently early, might have promoted the healing, or prevented the occurrence of many of the apertures, which are recorded in the previous table as unclosed, but after making due allowance for judicious treatment, I have no doubt the general result would show that perforations following constitutional diseases heal with great difficulty; those following local affections heal readily.

The following general conclusions seem to follow from the previous analysis.

1. Difference of sex does not exert any marked influence upon the occurrence of perforation.

2. Persons of delicate general health are not more in danger of perforation than the robust. Disease will rupture the membrane as readily in the healthy as in the feeble.

3. Disease of the ear, occurring in individuals of a strumous diathesis, is more likely to terminate in perforation than in persons of a different constitution.

4. Both membranes are more frequently perforated than either one singly.

5. The external meatus is *rarely* in a healthy condition, when an aperture exists through the tympanal membrane. This diseased state is sometimes a cause, but more commonly is a consequence of the perforation.

6. Foreign growths, like polypus and fungus, frequently co-exist with perforation, and often are an indirect consequence of it.

7. Otorrhœa is a very constant attendant upon perforation. This symptom, for otorrhœa is a symptom and not a disease, is not only a frequent indication

of perforation and often kept up by it, but, in a large majority of cases, is the earliest warning of an insidious disease that will lead to it.

8. The mucous membrane of the cavity of the tympanum is variously affected by the existence of a perforation. It is sometimes of a pale red colour, and without inflammation. More frequently it is congested. Occasionally, it is congested so as to be pushed through the aperture. In rare instances, it is covered and protected by a white, dry membrane upon its surface.

9. Quite a large proportion of all affections of the ear are complicated with or terminate in perforation. About one-fifth terminate thus.

10. An aperture (after it has existed for some time) generally occupies from a third, to a half, or two-thirds of the membrana tympani. The smaller its size, the greater is the probability and the facility of cicatrization.

11. The power of hearing is diminished, but is not obliterated by a perforation. A simple aperture of moderate size, *i. e.* one uncomplicated with disease of the cavitas tympani, or of the external meatus, produces only a slight degree of deafness. A simple aperture of large size, or even a complete destruction of the membrane, does not destroy the hearing.

12. Perforation is most likely to occur in childhood. Its most frequent cause is acute or subacute otitis. It is occasionally produced by accident or puncture. The common causes of what might be called perforating otitis, are the exanthemata, exposure to cold, eczema or erysipelas of the ear, and improper syringing.

13. The position of the aperture is various. When large, it is central.

14. The condition of the ear, and the hearing, may be improved by treatment, when the perforation itself cannot be healed.

15. Perforations, following the exanthemata or constitutional diseases, are the least disposed to heal. Those following exposure to cold or local causes, inducing ordinary otitis, are more likely to heal. Those following puncture or accident, heal readily.

Among the various subjects of inquiry suggested by the analysis of the previous cases, there are two or three of especial importance. These are, first, the course, symptoms, and treatment, prophylactic and otherwise, of perforation following the exanthemata, or of what might be appropriately called exanthematous perforation; second, the symptoms and treatment of perforation, when induced by other causes than the exanthemata, or of simple acute perforation; and third, the general treatment of chronic incurable perforation. The propriety of discussing exanthematous perforation separately from other forms of rupture of the membrana tympani will be apparent as we proceed. Let us examine these subjects briefly in the order they are mentioned above.

In the first place let me remark, that the importance of watching the condition of the ear during and after scarlet fever and measles, can scarcely be over-estimated. From the data upon which this paper is founded, it appears that nearly one-half of all cases of perforation follow the exanthemata, a result which only confirms the statements of other observers. We have also seen that the perforations which are produced by, or follow the exanthemata, are the least disposed to heal of any. These facts are urgent reasons for watching with extreme care the condition of the ear during and after scarlatina and measles, and for employing all possible prophylactic means against the occurrence of so dangerous an accident as perforation. An additional and equally urgent reason for this watchfulness and treatment is found in the fact that a proper management of the ear, during the acute stage and convalescence of the exanthemata, will go a great way towards preventing perforation. And if perforation does occur, an appropriate treatment, instituted sufficiently early, will, in a large number of instances, enable the aperture to close up. So important is a proper attention to the ear during and after the diseases just referred to, that a physician who treats such cases and neglects to give this attention cannot be said to perform his duty to his patient. Indeed, I fear the condition of the ear is too generally overlooked during the exanthemata. The attention of the physician and the attendants is engrossed by the constitutional disease. If there is a slight earache, or a little discharge from the meatus, it is altogether neglected, or treated lightly. Perhaps the nurse is directed to drop some kind of oil into the ear, or to syringe it; more commonly, the physician remarks that it is a matter of no consequence; it will get well in a short time, if it is only let alone, and possibly adds a needless caution about meddling with runnings from the ear. Thus the fears of the patient and his friends are quieted. He gets well, but his ear continues to discharge. In the course of a few weeks or months, the continued discharge, or partial deafness, or both, compel him to seek medical advice. His ears are now carefully examined, and one or both membrana tympani are found to be perforated. The evil is done. Only palliative treatment can now be instituted for the relief of a lesion, which, I venture to say, might have been prevented in more than half the cases of its occurrence. It is the duty of practitioners to examine the state of the ear in all cases of scarlatina or measles. The attention of the patient or his attendants should be called to the ear. They should be told to watch it, in order to report the first symptoms of any derangement. Instead of having their fears quieted, they should be told that the time to prevent future evil consequences is at the beginning of the attack.

Fortunately perforating inflammation of the ear does not come on without warning. We have already seen that in 47 out of 52 cases, otorrhœa, either with or without other symptoms, marked the access of disease which resulted in perforation. In 12 of these 47 cases, otalgia was associated with the discharge from the meatus. In every case which followed the exanthemata, otorrhœa, to which sometimes earache was added, gave warning of danger. The practitioner, then, who has charge of scarlatina, measles, etc., should be on the look out for the slightest otorrhœa, or otalgia. The nurse, or other attendant, should be directed to watch the ears carefully, and to report to the physician the first sign of moisture about the orifices of the meatus. In like manner, any complaint of earache should be watched for and reported, and the occurrence of one or both of these symptoms should be the signal for a careful inspection of the ears. It is not difficult to examine them, nor to recognize the existence of a morbid condition in them. The services of a specialist are no more necessary to do this than they are to recognize the existence of a pneumonia or of a congested os uteri. By means of a speculum auris and a good light, the condition of the meatus and of the membrana tympani can in most cases be satisfactorily ascertained. When a sunlight cannot be obtained, or the patient is too sick to be placed in a position which will enable the sun's rays (aided by a common mirror, used as a reflector), to enter the meatus, an artificial light can be advantageously substituted. A lamp, with a common reflector attached, which can be held so as to throw a strong light upon the patient's ear, will answer the purpose just as well as any of the expensive and complex lamps for the ear which have been invented, and a great deal better than most of them.

It is not to be denied that there are many cases which do not admit of an examination when the ear is first attacked. The patient may be too sick to allow of its being done. The sides of the throat and face may be so swollen as to nearly close the orifice of the meatus and prevent any exploration. Or the meatus itself may be tumefied and tender, so as to forbid the necessary manipulations. But after making due allowance for all such cases, there remain a large number, doubtless a majority, in which an examination could be easily made, if the attending physician only felt the necessity of making it. Moreover, it is not generally the case that such an examination is demanded at the time when the constitutional disease is at its height. I have no statistical data by which to decide this point, but my impression, so far as I can recall the cases which have come under my observation, is, that in a large proportion of the cases of perforation following the exanthemata, the local affection does not begin till the acute stage of the constitutional disease has passed; and more than this, the local affection frequently does not appear till convalescence from the constitutional one is fully established. After the general affection has subsided, an exploration of the ear can always be readily made, and the extent of the local disease ascertained.

When the membrana tympani is perforated by ulceration, following the exanthemata, the membrane itself is not usually, if ever, the part primarily affected. The disease commences either in the cavity of the tympanum or in the external meatus or in both. Most frequently it begins in the former. When it commences in the meatus it is most apt to come on during the period of desquamation after scarlatina, or, when the specific eruption has entirely receded, after measles. If it commences in the cavity of the tympanum, it generally shows itself at the time when the fauces are most seriously affected. In some cases, the cavity of the tympanum and the external meatus are simultaneously affected. The morbid appearances and the progress of the disease depend a good deal upon which of the two ways just indicated it begins.

When the *external meatus* is the seat of the primary attack, its usual course is the following. Soon after the specific eruption begins to subside, perhaps a week or ten days later, or possibly while the eruption is at its height, the patient complains of irritation about the meatus. If not old enough to complain of this, he manifests it by working at the orifice, trying to get his finger into the passage, and to scratch and pull the ear. Presently a little moisture is seen about the orifice, which soon increases so as to become decided otorrhœa. We have already seen that in forty-seven out of fifty-two cases of perforation, a discharge from the ear gave the first warning of approaching danger. Frequently the commencement of the otorrhœa is accompanied with earache. Sometimes the latter is so slight as to be forgotten by the patient, unless it is inquired for by the physician. The discharge is at first slight and thin, resembling a serous secretion. It soon becomes copious and thicker, and is often quite offensive. There is not usually much tenderness of the meatus, though in some cases, the orifice is sensitive to pressure. More frequently, the passage is swollen, and sometimes it is rendered sore by the acridity of the discharge. If only one ear is affected, there is no apparent deafness, but in reality, on carefully testing the hearing, the latter is found to be impaired. If both ears are affected, there is a notable diminution of hearing. The disease, which is now fully established, *may* stop spontaneously. More often it continues indefinitely, and leads to the various lesions which have been enumerated. When an ear which is thus attacked is examined, the dermal tissue of the meatus at the commencement of the attack is seen to be vascular, moderately swollen, and secreting a thin serous fluid. No "gathering" or abscess has been formed and broken, but the dermal tissue pours out a thin secretion, not unlike that which floods the eye in conjunctivitis. The vascularity sooner or later extends to the external lamina of the membrana tympani, and thus the external meatus is turned into a secreting cul-de-sac. If the inflammation is not at once arrested, spontaneously or artificially, the delicate lamina of the membrana tympani are eaten through, and perforation is accomplished.

The treatment before the membrane is perforated is both simple and effectual. When the vascularity of the passage and the attendant discharge is accompanied with tenderness and earache, and the strength and age of the patient permit, one or two leeches should be applied to the orifice of the meatus. The passage should be sedulously cleansed with warm water several times a day. As soon as all tenderness has disappeared, or rather, as soon as the acute stage has passed, astringent lotions of lead, zinc, alum or tannin, should be instilled into the meatus four or five times a day, so as to fill the canal, and should be kept in contact with the inflamed surface for at least five minutes at a time. While astringents are used, it is desirable to keep up, back of the ear, a moderate degree of counter-irritation by means of cantharides or croton oil. When the discharge is purulent and offensive, the application of a solution of nitrat. argenti, by means of a bit of cotton and a pair of slender bladed forceps, to the whole extent of the inflamed surface, to the membrana tympani as well as to the meatus, if the former is involved, is beneficial. The solution may vary in strength from ten to twenty grs. to the ounce, and should be applied every (second or) third day. If the otorrhœa comes on without tenderness or pain, it is generally better to dispense with leeching, and to employ astringents and counter-irritation immediately. I have seen many cases get well, by simply cleansing the meatus with warm water two or three times a day. It should be recollected that the inner extremity of the meatus is lower than the outer; its direction, going from without inwardly, is on the whole downwards. Hence there is a mechanical reason for the accumulation in the passage of the epithelial debris, which are thrown off from the meatus as well as from other parts of the body after the exanthemata. This accumulation is in itself a cause of irritation, and the getting rid of it will often be sufficient to prevent further trouble.

When the *cavity of the tympanum* is the part primarily affected, the membrane is perforated in consequence of an extension of the exanthematous disease of the fauces, through the Eustachian tube into the cavitas tympani. An inflammation is set up which Mr. Wilde very properly calls exanthematous otitis, and which he admirably describes as follows: "In the otitis accompanying scarlatina, measles and smallpox, the disease either commences in the mucous lining of the middle ear, or spreads into that cavity from the mouth or fauces, through the Eustachian tube. Sooner or later, however, the membrana tympani becomes engaged, and is ruptured, either by ulceration or from the pressure of the contents of the tympanum, and otorrhœa, with its long and varied train of consequences, ensues."[1]

The earliest symptoms of this extension into the ear are generally earache and deafness. The otalgia is severe; not unfrequently it is so intense that the patient seems to be in agony with it, and is sometimes delirious. The deafness is also decided, though the hearing is not completely destroyed. After the otalgia has continued for a few hours, sometimes for only two or three, more often for twelve or twenty, the membrane is ruptured; a discharge of pus pours through the aperture, and there is immediate relief. The relief is so great that the patient feels all danger to have passed; or, if too young to think about it himself, his parents entertain this opinion, and look upon the subsequent otorrhœa as a trivial matter. Perhaps the physician encourages them in this notion, which a partial return of the hearing is apt to confirm. Occasionally the attack is more insidious. The severity of the constitutional disease may mark the local affection, or almost painless ulceration may eat its way from the fauces through the Eustachian tube into the tympanal cavity. The mucous membrane of the cavity then takes on the same unhealthy action.

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[1] Aural Surgery, p. 277, Lond. ed. [American edition, p. 268.]

Pus accumulates, distends the membrane, and presently burst through it. A discharge from the meatus seems to be the first indication of the local difficulty. But even when the ear is thus insidiously attacked, there are generally symptoms enough to warn a physician who is aware of the danger and watching for it. The child is seen to roll his head around as if in distress; or he complains of slight earache; or he is deaf, without apparent reason; or firm pressure upon the meatus gives evidence of deep-seated tenderness; or deglutition or mastication may cause pain in the ear. One or more of these symptoms are generally present as indications of the approaching enemy.

If the medical attendant, whose suspicions have been thus aroused, makes an examination of the ear, he will find, if the membrane is affected, more or less of the following appearances. The membrana tympani will have a colour varying from a bright and diffused scarlet to a dark pink. If the cavity of the tympanum is distended with pus or other fluid, and the membrane is not ruptured, it may be seen evidently bulging out, like an abscess, pointing. If the patient is old enough to inflate the cavity by a forced expiration, having the mouth and nostrils closed, he should be told to do so. Let the physician then apply his ear to that of the patient. When the cavity is inflated, he will hear a distinct mucous bubbling if the air enters the middle ear, very like the coarse crackling of a tuberculous cavity. Oftentimes the inflation will produce a momentary and severe pain in the ear, caused by the unusual distension of the inflamed tissues. If the cavity is not inflated, the attempt alone produces pain in the ear. The fauces exhibit the various appearances which accompany the exanthemata. The unhealthy condition extends from the soft palate, laterally and upwards, as far as the mucous membrane can be seen. The morbid discharges, purulent, acrid and otherwise, themselves the debris of destroyed tissues, find an exit through the nose as well as the mouth, and often, as we have seen, through a rupture of the membrana tympani, into the external meatus. Additional evidence of the diseased state of the middle ear, can be obtained, if necessary, by pressing a finger, introduced into the fauces just above and back of the tonsils, up towards the ear. This sort of rough digital examination will cause pain in the ear as well as in the throat, if the former is inflamed; and if the membrana tympani is perforated, it will often squeeze pus through the hole into the meatus. When perforation has taken place, a loud whistling rale is produced by inflation of the cavity. This is so characteristic of perforation, that of itself it is sufficient to determine its existence, even if the aperture cannot be seen through a speculum.

When the external meatus, the Eustachian tube and cavity of the tympanum are *simultaneously* attacked, not an unusual occurrence, the morbid condition of the external meatus, already described as preceding perforation will be found to co-exist with the diseased state of the middle ear.

The extent to which this exanthematous affection of the middle ear is amenable to treatment varies with the age of the patient, the severity of the constitutional malady, and the decision and promptness of the physician. The patient may be too young to admit of appropriate treatment. The constitutional affection may be so grave as to preclude even an examination of the ear, and still more any treatment of it. The physician may be timid or faithless, and let the opportunity for treatment pass by. Fortunately the first two difficulties, the too tender age of the patient, and the severity of the general disease, do not exist in the majority of cases. It is to be hoped that the latter difficulty is of still rarer occurrence.

The indications for treatment are, 1st, to avert perforation by subduing local inflammation, altering the local morbid action, and keeping the Eustachian tube, and especially its pharyngeal orifice, open, so that all unhealthy secretions may find an easy egress out of the middle ear into the throat. 2d. If perforation must take place, to make an artificial opening through the membrana tympani, for the discharge of whatever may be pent up in the cavity of the tympanum. 3d. After perforation has taken place, whether artificially or spontaneously, to employ, *immediately*, all general and local means to bring about a healthy action of the middle ear. 4th. To induce healing of the perforation, when this can be done, and thereby restore the membrane to its integrity.

The first indication requires a variety of measures to meet its demands. When there is acute inflammation, and the general strength of the patient is sufficient, one or more leeches to the orifice of the ear will be found of great service. In many cases, however, the strength of a patient, debilitated by a previous constitutional malady, is not equal to the loss of blood produced by a single leech. Blisters behind the ear are better borne, and should always be applied, if there are signs of inflammation of the membrana tympani, or if there is otalgia. Croton oil may be substituted for cantharides, if the patient seems too weak to bear the latter well. The counter-irritation should be kept up for a week or more after the appearances of inflammation have disappeared. Local applications to the fauces and to the pharyngeal orifice of the Eustachian tube are of great importance. The character of these applications should vary with the condition of the throat. In fact the local treatment, which the morbid state of the mucous membrane of the throat generally requires after the exanthemata, should be sedulously employed; only great care should be taken to make these applications reach the Eustachian orifices. Solutions of muriatic acid, of the liquor sodæ chlorinatæ and of nitrate of silver, have proved in my hands the most serviceable. By means of a sponge attached to a curved whalebone, it is quite easy to apply any solution to the faucial extremity of the Eustachian tube. The sponge should be quite small and soft. It can be easily passed back of the pillars of the palate and up towards the ear, and thus made to sweep over the orifice referred to. This accomplishes the double purpose of clearing out the opening of the passage, and often the passage itself, and of applying a caustic or alterative solution to the membrane. Another application of equal importance is nasa syringing. The floor of the nares enters the throat on a level with the opening of the Eustachian tube. Hence a current of water, thrown into the throat through the nostrils, will reach and cleanse the mouth of the Eustachian tube. A gum elastic bag with an appropriate pipe or nozzle is the best instrument for this purpose, though an ordinary syringe will answer very well. The water should be directed straight back to the posterior fauces, and not in an upward direction towards the eye. The operation is so painless that children, however young, rarely object to it seriously. The injected water, or a large portion of it, generally passes directly into the stomach, without producing much disturbance. This application should be repeated two or three times a day in ordinary cases. When the morbid secretions are copious and the throat largely affected, it is well to repeat it every three or four hours, during the day. As more or less of the injected liquid is swallowed, it is not well to employ anything which would be injurious if swallowed. Medicated liquids can be more safely applied by the sponge and whalebone, mentioned above. It is sometimes convenient to use, instead of the sponge, a syringe with a long, delicate, curved pipe and a perforated extremity so as to shower the parts which it is desirable to reach. If, by these measures, inflammation is allayed, and all morbid discharges removed from the external meatus and the Eustachian tubes, and the mucous membrane of the throat brought into a healthy condition, the practitioner will often have the satisfaction of seeing the cavity of the tympanum preserved from any serious invasion; and when it is affected, its secretions will thus be enabled to find an outlet into the throat instead of into the external meatus. Catheterization of the Eustachian tube, and syringing through the catheter, cannot be safely employed in acute cases. When the acute stage has passed, however, there is less danger from such an operation.

The second indication, viz., to make an artificial opening through the membrana tympani, exists whenever it is apparent that a spontaneous rupture will occur, if the membrane is not punctured. The symptoms which show this indication to exist are the unhealthy condition of the fauces, referred to above, occasional or persistent otalgia, deafness, and lastly and most important, a bulging out, or pointing of the membrana tympani itself. When this convexity or pointing of the membrane occurs, it can be easily recognized. The membrane can be seen through a speculum sticking out into the meatus, not translucent but opaque and perhaps reddened, and clearly just ready to break. The relief which follows a spontaneous rupture is well known. Equal relief is obtained by an artificial one. The advantages of this proceeding are, in the first place, that of making a clean cut through the membrane, which is much more likely to heal than a hole eaten through by ulceration. Secondly, the artificial opening can be and should be made large enough for the contents of the cavity to empty themselves at once into the external meatus. The spontaneous opening is usually a small one at first, not larger than a pin's head, but it gradually becomes larger and larger, until, as the previously tabulated cases show, the whole or nearly the whole membrane is destroyed. The artificial opening partakes more of the character of a slit. Its edges fall together, when the cavity ceases to discharge, and readily reunite. Thirdly, the operation is easily performed; it is almost painless, and with moderate ease it can be done without any injury to the adjacent tissues. A convenient instrument for the operation is a small exploring trocar, or a long, slender delicate knife, double-edged at its extremity, or a cataract needle. The place of selection for the puncture should be in the inferior and anterior half of the membrane, just below the insertion of the handle of the malleus. Let a tubular speculum, that of Mr. Wilde, of Dublin, or of Mr. Toynbee, of London, be introduced into the orifice of the meatus. Then while the patient's head is firmly held, and the surface of the membrane is illuminated by the sun's rays or an artificial light, it is only necessary to cut through the membrane at the point specified. The operator should of course bear in mind the size of the cavity of the tympanum, and take care not to wound its opposite wall. There is no danger of doing this if the instrument is pushed slowly through the membrane, and withdrawn as soon as its delicate laminæ are *felt* to be divided.

I am not aware that aurists have generally advised puncture of the membrana tympani in cases such as are now under consideration. The proposition, however, is not altogether unsupported by authority. Martell Frank, whose admirable treatise[1] on Diseases of the Ear has not yet been translated into English, states that he is frequently in the habit of puncturing the membrane for the purpose of applying remedies to the cavity, even when the latter is not filled with any morbid secretion. Speaking of catarrhal inflammation of the cavity, and of mucus pent up within it, he says: "We must here refer again to the necessity of perforating the tympanum. It is impossible, especially in chronic catarrh, to free the cavity from the mucus accumulated within it by any of the proposed remedies or applications. In such cases we regard it as necessary, in the first place, to perforate the membrana tympani." . . . "After an artificial perforation of the membrane, we have often met with a viscid, gelatinous, slimy mass, which was immediately forced into the external ear by an injection of air or water, blown through a Eustachian catheter, introduced into the Eustachian tube." . . . "We have never had any reason in a single instance to be dissatisfied with this proceeding, and can emphatically recommend it, without hesitation, in most cases of chronic catarrh."[2] Dr. Martell Frank does not refer, in this passage, to the diseases with which we are now concerned, nor does he elsewhere propose perforation in accumulations within the cavity of the exanthemata. But his testimony is exceedingly valuable to the simplicity and ease and safety of the operation.

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[1] Practische Anleitung zur Erkenntniss und Behandlung der Ohrenkrankheiten, von Dr. Martell Frank. Würzburg, 1845.

[2] Op. cit. pp. 335–6.

If it can be easily and safely done in one case it can also in the other. Fortunately, it is not necessary to call in the aid of a specialist for the performance of this operation. It is so easily performed, that any judicious practitioner can do it as safely as he can open an ordinary abscess.

The third indication, viz., to promote as rapidly as possible a healthy action of the tissues, after the membrane has been spontaneously ruptured or artificially punctured, is answered by a careful attention to the measures pointed out under the first indication. It is needless to recapitulate them, or to urge their importance. But whatever local applications are employed, the necessity of frequently cleansing the external meatus by syringing with warm water, and of cleansing also the pharyngeal orifice of the Eustachian tube by nasal syringing should never be forgotten. This is a prerequisite to all other local treatment.

I am afraid that practitioners are too apt to forget and neglect this whole matter. At the risk of tiresome repetition, I must urge again and again the importance of attention to it. When otorrhœa occurs after the exanthemata, its cause should be carefully sought after, at the earliest possible moment. If upon examination it is ascertained that perforation has taken place, the patient should not be given up as incurable, but the measures already indicated should be at once put in force, in order to prevent further injury. The sooner the local morbid condition is controlled, the less will be the extent of permanent local damage, and the greater will be the chance of a closure of the aperture. If perforation has not taken place, there is equal reason for employing diligently the same measures in order to prevent it.

The means of fulfilling the fourth indication, viz., to induce healing of the aperture and thereby restore the membrane to its integrity, have been partly described already. They include all those applications which have been mentioned as necessary to restore the external meatus, the cavity of the tympanum, the Eustachian tube, and the fauces to a healthy state. When this has been done, the otorrhœa checked, and the inflammation allayed, and when the perforation, which may still exist, is not too large, it is sometimes possible to make the hole grow up. But the local treatment of the membrana tympani and of the edges of the aperture, with this object in view, can be more appropriately considered further on.

When the external meatus and the middle ear are simultaneously attacked, the treatment should of course be addressed to all the diseased tissues. The applications previously indicated for exanthematous inflammation of the meatus should be added to those for exanthematous otitis; and all of them should be modified so as to meet the exigencies of individual cases.

If these statements of the importance and favourable effects of treating disease of the ear following the exanthemata are true, it may be asked, how are we to account for the large number of perforations which the previous table exhibits? The answer is, that most of the cases recorded in the table were not treated for the local difficulty till months, and more frequently years, had elapsed after its commencement. During the exanthemata, when that was the cause, little or no attention was paid to the ear; and when otorrhœa or otalgia first occurred, no heed was given to the warnings they uttered. The local disease was neglected when it should have been treated, and the table exhibits the result of such neglect in the lesions it records. I do not wish to make any sweeping assertions; and I do not say that these lesions, perforation among them, can always be prevented, or the integrity of the ear, when they cannot be prevented, always restored. But I do say that a great deal can be accomplished in the way of prevention and relief, by appropriate local treatment at the appropriate time. A great deal more can be accomplished than many will be willing to believe, until they make the trial for themselves. It would be easy to detail a number of cases in support of these views, but it would extend this paper, already largely prolonged, to too great a length. I will only give a few as illustrations.

Case I.—M. C., a girl, æt. 7, with light hair and eyes and large tonsils, had measles in the summer of 1849. During the attack, she suffered several times from otalgia, but as it soon disappeared, no attention was paid to it by her friends or her attending physician. The measles went through their ordinary stages, and the patient convalesced favourably. During convalescence, a slight discharge appeared from the right meatus. It was unattended with pain or odour. Hoping it would subside, the parents let it alone. At length, when *six months* had elapsed, and the otorrhœa had not got well, my attendance was suggested. I found the walls of the right meatus near the membrana tympani, moderately red and secreting matter; the membrana tympani, moist, slightly vascular, and not perforated. There were no other morbid appearances. I directed the ear to be syringed twice a day with warm water, and after syringing, a solution of acet. plumbi, gr. iij to ℥j, to be poured into the meatus, and kept in contact with the parts several minutes each time. In eight days the otorrhœa stopped, and the walls of the meatus and the membrana tympani were normal.

The only remarkable point in this case is, that an otorrhœa should have existed so long with so slight a degree of local disease. It is possible that it might have stopped spontaneously; but it is equally possible that it might have increased, if it had not been artificially checked, till perforation had taken place. This case is given merely as an illustration of the way in which perforating ulceration of the membrana tympani following the exanthemata often commences, when its origin is in the external meatus.

Case II. exhibits more clearly the early symptoms of exanthematous inflammation of the external ear passage. G. S., a healthy boy, æt. 4, had measles in the spring of 1856. The eruption came out fully, and subsided normally. In less than a week I was able to discontinue attendance. During the attack, there were no symptoms of inflammation of the ear. I informed his mother of the danger of aural disease, and directed her to watch his ears carefully and let me know if there was any otalgia or the slightest otorrhœa. Before many days had elapsed I was sent for, and told that during the night previous to this call, G. S. was awakened by a severe earache. The pain continued for about half an hour, and was apparently relieved by putting some warm and moist application upon the ear. In the morning his ear seemed to be well, and his mother said that she should not have sent for me if I had not requested her to inform me of any occurrence like earache or discharge. On examination, the walls of the meatus of one ear were found to be somewhat vascular, and the surface of the membrana tympani of a diffused red colour. The whole passage was moist, though not secreting largely. Croton oil was applied back of the ear; the passage was gently syringed; in a day or two a mild solution of acet. plumbi was poured into the ear a few times. In less than a week, the inflammation subsided. There was no more otalgia or otorrhœa. The ear has since been well. This attack was mild, and yet if it had been neglected, it would have been very likely to end in perforation.

Case III. is an example of inflammation of the middle ear as well as of the external meatus, and membrana tympani. M. ——, a healthy girl of three or four years old, living in the neighbourhood of Boston, was attacked with scarlet fever in July, 1854. The attending physician reported the child to have been very sick. The characteristic eruption came out fully, and disappeared in the usual way. The integuments and glands of the neck were swollen, and the fauces ulcerated. When convalescence commenced, a copious discharge poured from both ears, and an acrid running from the nostrils. I saw the child in consultation, about 10 or 12 days from the beginning of the fever. She was weak, irritable and restless. Her skin was desquamating freely. Her fauces were red and swollen, with patches of a dirty white colour, at different points. This appearance extended as far up and back of the pillars of the palate, as the mucous membrane was visible. A yellowish secretion poured out of the nose and ears. Her hearing was impaired, though to what extent could not be accurately determined. After syringing the ears, the walls of each meatus were seen to be moist and red. Both membranæ tympani had a diffused red colour, and were perforated. The perforations were small, being just large enough for matter to be seen oozing through from the tympanal cavity into the meatus. I advised the application of diluted muriatic acid to the fauces; syringing with water through both nostrils into the throat several times a day; syringing of the ears often enough to keep the passages free from purulent accumulation; continued counter-irritation back of the ears; and after the lapse of a day or two, the instillation of a solution of acet. plumbi, three or four times a day into each meatus. The employment of appropriate general measures, calculated to hasten convalescence were also urged. I did not see the patient again, but was informed several months later by her physician that her recovery was perfect. The otorrhœa soon subsided. The apertures through the membranæ tympani healed, and her hearing was normal. The proposed local treatment was faithfully followed.

Case IV. presents symptoms of a still graver character. My attendance was requested on H. B., a boy, æt. 3½, residing in Boston, and attacked with scarlet fever in Jan. 1857. The eruption came out well and went off as usual. While desquamation was taking place, the throat began to swell, and large abscesses formed, first beneath one ear and then the other. They were lanced and discharged copiously. The fauces were moderately but not largely ulcerated. At one period, the renal secretion stopped entirely for 36 hours and then came on again. Symptoms of dropsy of the head appeared, to such an extent as to render recovery extremely doubtful. At length, after a convalescence prolonged for three months, he got well. But what we are especially concerned with now, is the affection of his ears. On the 5th day of the fever he had severe otalgia of the right ear. The orifice and walls of the meatus were swollen and tender, and the membrana tympani could not be seen. Opiate fomentations were applied, and the earache disappeared. Two days later an acrid, watery discharge dripped from his nose, and at the same time an otorrhœa appeared from both ears. He was too sick and feeble to admit of any local treatment of his ears, beyond keeping them faithfully clean with the syringe. By the third week of the fever, he seemed to be completely deaf. He paid no attention to the loudest and sharpest sounds, even when close to his ear. As soon as his general condition admitted of a careful examination of his ears, I found both membranæ tympani perforated. The perforations were large enough to allow the passage through them readily of the end of a common sized probe. The local treatment was the same as that of Case III., except that liquor sodæ chlorinat. was applied to the fauces instead of muriatic acid; and, on account of the extreme weakness of the patient, nasal syringing was not used. The meatus of each ear, however, was carefully syringed several times a day after the appearance of the discharge. Counter-irritation was employed as soon as the severity of the general disease abated. By the time convalescence was fully established, that is, about three months from the commencement of the fever, the aperture in the left membrana tympani was closed, and the appearance of the meatus and the hearing were normal. The perforation of the right membrana tympani still existed, though of such small size as to render its closure probable.

Case V. is an illustration of the facility of puncturing the membrana tympani and of the benefit derived from the operation. It is extracted from Mr. Harvey's late work on aural diseases.

"Two children, sisters, were brought to the author for his advice; they were both suffering from otorrhœa and deafness, with perforated membrane on each side, the result of a recent attack of scarlatina. A brother, nine years of age, had been sent into the country to be out of the way of the contagion. The author requested that he might have early tidings if this child were attacked, which took place on his return home a week or two afterwards. The child was delirious and suffering extreme agony in the ear. On examining the meatus, the canal was much narrowed, and dilating it with the bivalve forceps showed the membrane of the tympanum red and swollen. Placing the cases of the other two children (who were suffering so much from the same cause) before the parents, the author obtained permission to puncture the membrane, an operation which he had long determined to perform on the first opportunity, being anxious, if possible, to prevent the misery he had so often witnessed. This was now performed on both ears with a broad-shouldered cataract needle. Upon withdrawing the instrument it was seen to be besmeared with purulent matter, and although there was not any immediate copious discharge, yet in a few hours matter was seen to run freely from the meatus. The child expressed himself as much relieved by the operation, and the result was highly satisfactory. The discharge continued for two or three weeks, and then ceased. The aperture closed on each side, and not the slightest imperfection in hearing is discoverable, whereas both the sisters are slightly deaf to this day, and have not yet got rid of the otorrhœa. The author has since repeatedly opened the tympanum in cases of suspected accumulations of matter from other causes, and has seen no reason to regret taking this step, as in every case the membrane has healed so readily that a repetition of the operation has been sometimes needful."[1]

I have preferred to quote the above case rather than to present one from my own experience, because it lends the authority of Mr. Harvey to the operation, as well as illustrates its beneficial results. We have already seen, by a previous quotation, that Dr. Martell Frank is frequently in the habit of performing it and with manifest advantage.

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[1] The Ear in Health and Disease, by William Harvey, F. R. C. S. pp. 101–2. London.

Let us now return to the second subject suggested by the table, viz., the symptoms and treatment of perforation when induced by other causes than the exanthemata, or of simple acute perforation. This form of perforation seems to be essentially different from the exanthematous variety. Its cause is rarely of a constitutional character. The affections which lead to it do not generally implicate so extensively the tissues of the ear. Its progress is milder, and it is much more amenable to treatment.

It may be produced, as we learn from the table, by exposure to cold, improper syringing, eczema, pneumonia, typhoid fever, accidental puncture, etc. Of these various causes, cold is the most frequent. When this leads to perforation, it does so by setting up an inflammation of the middle ear, a true otitis, which, if not arrested, goes on to suppuration, involving in its action the various tissues of the part, including the membrana tympani. The latter is perforated, as in exanthematous perforation, by ulceration making a passage for the confined pus. The other causes which have been mentioned, such as salt water getting into the ear during a sea bath, or violent syringing, or pharyngitis, or pneumonia sometimes induce otitis, and thus lead to perforation. It is perhaps needless to say that to accidental puncture of the membrane, the above explanation of the production of perforation does not apply.

It is apparent from these remarks, that the symptoms which attend simple acute perforation resolve themselves into those of otitis. We should always bear in mind, when attending a case of inflammation of the middle ear, the probability of perforation, and carefully watch from day to day the condition of the membrana tympani. In this as in the exanthematous variety, the two symptoms which are of most importance as warnings of the approach of danger—as urgent reasons for an examination of the ear—are otalgia and otorrhœa. The occurrence of one or both these symptoms mark the onset of the attack. It is not necessary to give a detailed account of otitis, as an antecedent of perforation. The severe pain, the tenderness, the painful mastication and deglutition, the swelling and the deafness are too well known to require recapitulation. The points to which I wish to draw attention now are that these severe symptoms attend a disease which is apt to perforate the membrane of the ear; that when perforation takes place, all the violent symptoms are greatly alleviated; and that hence both the practitioner and patient are in danger of being lulled into a false security, and of neglecting a treatment which is still important. The aperture will generally close, if an appropriate local treatment is pursued. If this is neglected, it will often remain open.

The circumstances which have been alluded to as causes of otitis, not unfrequently lead to inflammation of the membrana tympani alone; that is, to myringitis, without the mucous membrane or cellular tissue of the middle ear being much if at all affected. This form of inflammation occasionally results in perforation, though it more frequently terminates in thickening and opacity of the membrane. When there is danger of perforation, the myringitis partakes of an ulcerative character. A simple inspection of the membrane in a clear light is sufficient to determine whether the inflammation is accompanied with a deposit of lymph or with ulceration. In the former case, the membrana tympani presents a radiated red surface, tense, more or less opaque, and without any secretion; in the latter case, there is a diffused red surface, swollen and secreting a purulent or muco-purulent fluid. Sometimes a distinct spot of ulceration can be discerned on the surface of the membrane; but this cannot with propriety be called myringitis. Sometimes ulcerative inflammation of the membrane of the tympanum comes on insidiously; that is, without pain, but never without more or less otorrhœa. Hence the great importance of examining the ear whenever there is any discharge from it, not only after or during the exanthemata, but in all cases of otorrhœa.

The form of insidious and painless inflammation of the membrana tympani, just alluded to, is too important as a cause of perforation to be passed over with a bare allusion. It occurs most frequently in persons of a strumous diathesis, or of an enfeebled constitution. A slight exposure to cold, or to a high wind, or to anything which irritates the ear is a sufficient exciting cause. Generally the cause is so slight as scarcely to be remembered at all. It is followed by a sensation of moderate discomfort in the ear, but without positive pain. Little or no attention is paid to the state of the ear; and presently, in a day or two, or it may be within twelve or twenty-four hours, otorrhœa commences. This may be the first symptom which compels the patient to notice his ear. If at this stage, an examination is made, the membrane is found to be largely ulcerated and perhaps already perforated. The following case illustrates this form of perforation better than any description.

Case VI.—Mrs. A. N., an American, about 27 years old, with light hair and complexion, requested my attendance Jan. 25, 1857, on account of a sudden discharge from the right ear. Mrs. N. was by no means robust, and yet enjoyed tolerable health. The glands of her neck were apt to enlarge when she took cold; her tonsils were larger than usual and fauces congested. Three or four days before the otorrhœa appeared, she was exposed to cold by passing through a cold passage way without sufficient protection. She felt the cold sensibly in her head at the time. An hour or two later she had some pain in the right ear. But this was very slight and soon passed away. It was so slight that she did not think of it again, till a discharge commenced. For a day or two she was conscious of a slight degree of irritation in the ear, without actual pain or any other symptom. On the 24th of Jan. there was a slight discharge of a thin watery fluid from the ear, which on the 25th became more copious and thicker. I found the meatus red, considerably swollen, slightly tender, not painful, and nearly full of matter. The membrana tympani could not be satisfactorily seen. A blister was applied back of the ear; the meatus syringed three or four times a day, and a weak solution of acet. plumbi. (gr. ij to ℥j) instilled into the ear twice a day. Two days later, the swelling of the meatus had diminished so that the membrane could be seen. A perforation was found in the lower half of the membrane, through which I saw bubbles of air and mucus blown by inflating the cavity. The malleus was in situ. The remaining portion of the membrane was of a diffused red colour. The discharge was of a mucous character and not offensive. The cavity of the tympanum and the Eustachian tube did not appear to be much implicated in the inflammation. The ticking of a watch could be heard only when the watch was close to the ear. Decided counter-irritation was kept up back of the ear; the inflamed surfaces were touched every other day with a solution of nit. argent. (gr. xx to ℥j); warm syringing was employed *pro re nata;* the instillation of a solution of lead was continued, and the strength of the solution was gradually increased to grs. x to ℥j; at the same time the iodide of iron was given internally, and a generous diet with wine or porter advised. Under this treatment, the discharge gradually diminished, and the meatus and membrana tympani assumed a healthy aspect. By the first of March, five weeks from the commencement of the attack, there was no otorrhœa, the orifice of the meatus was coated with wax, its walls were healthy, the membrana tympani had a small perforation through its inferior half, but was otherwise healthy; and the hearing on that side was so much improved as not to inconvenience the patient, though it was far from being equal to that of the left ear. A few months before this attack I had occasion to examine the ears of Mrs. N., and found both of them in a normal condition. I was, therefore, assured of the integrity of the membrane previous to the attack just described.

The treatment of simple, acute perforation should vary somewhat according to the character of the attack which precedes it. When it is preceded by acute inflammation of the tympanal cavity, antiphlogistic measures should be promptly employed. One or two or half a dozen leeches should be applied back of the ear and around the orifice of the meatus; a brisk cathartic should be given and repeated till the force and rapidity of the pulse are brought down; a rigid diet of gruel or simple farinaceous food only should be allowed; opiates will often be required to allay pain and produce sleep. The local treatment should consist of measures calculated to allay irritation and promote the free discharge of any accumulation. Steaming the ear with an infusion of poppies or with laudanum and water, will often give great relief, particularly if applied to the throat and fauces as well as to the ear. If the membrana tympani is seen pressed out from any accumulation in the cavity, it should be punctured. Whenever there is any discharge into the meatus, the latter should be gently washed out with warm water, often enough to prevent pus from accumulating in it. As soon as the acute stage is passed, counter-irritation back of the ear will be found of service. When the otitis is relieved by a discharge from the meatus, the care of the physician should not be intermitted; for the otorrhœa, which seems to relieve the pain, is generally an indication of rupture of the tympanal membrane. If the meatus is not swollen, the perforation can be readily seen through a speculum. If the meatus is swollen so as to obscure the membrane, the existence of perforation can be determined by asking the patient to inflate the cavities by a forced expiration. If a perforation exists, the air will be heard, on auscultation of the ear, to pass through the aperture with a whistling rale. In case rupture of the membrane has taken place, the meatus should be well and frequently syringed out with tepid water. The local and general antiphlogistic treatment should be continued till the inflammation of the ear has subsided. In most cases the aperture will close without any further treatment. As soon as the inflammation is subdued, the edges of the hole grow together, and the hearing is restored. There is often a slight degree of opacity perceptible for several weeks after such an attack; but this gradually disappears.

If the membrana tympani is inspected daily, while the process of the closing of an aperture is going on, the redness of the membrane will be seen to disappear gradually. The edges of the perforation, however, remain red and congested for some time after the other portions of the membranous surface have become clear. The perforation closes, as we should naturally expect, by an inflammatory process. And so long as the inflammation is confined to the edges of the hole and does not spread over the whole surface, it is to be regarded as a healthy action and not to be interfered with. This is an important matter. For on the one hand there is danger if active and antiphlogistic treatment is not promptly employed, that all the tissues of the ear will be so seriously affected as to destroy the hearing; on the other hand, there is danger of carrying local depletion so far as to prevent the setting up of inflammation enough to heal an existing perforation. When an aperture exists, the amount and continuance of local depletion should be regulated by the condition of the tympanal membrane. So long as its whole surface is red, either local bloodletting or counter-irritation should be kept up. But when the redness is confined to the edges of the aperture, depletion in any form is more likely to do harm than good. If this local inflammatory process is arrested before the aperture is closed, the perforation will in all probability be permanent. Indeed, if the myringitis subsides suddenly, leaving an opening through the membrane, with its edges clear and free from redness, means should be taken to excite local inflammation for the purpose of closing the aperture. In some instances this can be accomplished. Of this I will speak presently. When the acute stage has passed, and the surface of the membrane, notwithstanding the appropriate use of depletion, retains its red and congested appearance, local astringents, such as the sugar of lead or the acetate of zinc, or an alterative astringent like the nitrate of silver, should be applied directly to the surface of the membrane. This can be easily done by instilling them into the meatus. The strength of the solution should vary with the circumstances of each case. It should be weak at first and increased daily in strength, if the desired effect of constringing the bloodvessels of the membrane is not produced. As soon as the redness has disappeared from all parts of the membrane, except from the immediate neighbourhood of the aperture, the astringent should be discontinued. A longer use of it would be likely to prevent the healing of the perforation.

When the inflammation of the tympanal cavity has subsided, and the aperture refuses to close, it is of great importance to induce its healing, if this can be done. I have already alluded to the possibility of doing this. Observation teaches that a simple puncture of the membrane heals with great facility. We also learn from observation that small apertures, spontaneously induced, heal with almost equal facility if the diseased condition which caused them is promptly subdued. We have seen that a certain degree of inflammation accompanies the process of healing. Now when a membrane is ruptured in consequence of disease of the cavity or of the membrane itself, the object of the local and general depletive treatment, so far as the management of perforation alone is concerned, is to get rid of inflammation and its attendants, whether suppuration or otherwise, as rapidly as possible, and thereby bring the aperture, at the earliest possible moment, to the condition of a simple puncture. But as nature's way of closing an aperture is by means of inflammation, the inquiry naturally arises whether, in cases wherein a perforation remains after the disappearance of inflammation, it is not possible and safe to excite an artificial inflammation in the membrane, and thus enable the hole to grow together. With this object in view, I have been in the habit, for the last few years, of touching the edges of perforations which appeared indisposed to heal with a mild solution of nit. argenti or of iodine. The application has been followed in a short time by a red blush around the edge of the hole, and in repeated instances by a gradual approximation of its sides, till at length they united, and the membrane was restored to its integrity. Mr. Wilde alludes to this method of treating apertures in his late work,[1] but does not give to it the prominence which it seems to me to deserve. He employs for this purpose the solid lunar caustic. In this form nitrate of silver is more apt to act as a pure caustic on the membrane, destroying its tissues, than as a stimulant. I have found more advantage from employing a solution of lunar caustic, of a strength varying from a scruple to a half drachm to the ounce. Lugol's solution of iodine may be employed for this purpose. My own experience, however, leads me to prefer decidedly the action of nitrate of silver.

The easiest way of applying such a solution, is by means of a bit of cotton wrapped around the end of a delicate pair of long and slender bladed forceps. The cotton should be thoroughly saturated with the solution. In making the application, the cotton should not be thrust through the hole roughly, but gently touched upon the surface of the membrane close to the edge of the aperture. Soon after the application, the edges of the hole will be seen to redden, as if irritated. If this effect is not produced, the solution should be again applied, and the application repeated a third or fourth time, if necessary, so as to induce a slight degree of irritation. Sometimes an amount of inflammation is excited, which threatens to involve the whole membrane. This, however, can be easily controlled by a blister behind the ear, or by applying a leech to the orifice of the meatus. More generally, there is greater difficulty in exciting a sufficient degree of inflammation than in producing too much. The frequency of the application should be regulated by its effect. If but little irritation is produced, it should be repeated every day or every second day; if the effect is more marked, every third or fourth day will be enough. In favourable cases, two or three applications are all that is requisite to enable the aperture to close up. While this treatment is going on, the membrane should be carefully watched; and if, as sometimes occurs, there is any disposition on the part of the aperture to enlarge instead of contract, the local stimulating applications should be discontinued.

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[1] Op. cit., London ed., p. 303. [Am. ed., p. 292.]

The cases of perforation in which this treatment can be advantageously adopted, are those in which there is no suppuration or discharge from the middle ear; in which the aperture is not large; and lastly, in which no great amount of thickening or other organic changes have taken place in the membrane or the adjoining tissues. While suppuration is going on it is obviously impossible and probably would be undesirable to heal an aperture which affords an exit for the discharge. If the hole occupies more than one-fourth of the surface of the membrane, there is not much chance of making it close up; if it is of that size or smaller, and other circumstances are favourable, it can sometimes be induced to heal. Organic changes, such as thickening of the membrana tympani, unhealthy conditions of the mucous membrane of the cavity, etc., interfere with the growing together of an aperture. When, moreover, a perforation, of whatever size, has existed for several months, *after all inflammation, suppuration or discharge has ceased*, it is very unwilling to heal, probably owing to the existence of organic changes, which are out of sight in the cavity of the tympanum. Hence the importance of commencing this treatment as soon as the membrane is prepared for it. In some rare instances, I have seen perforations heal which had existed for a year or more. Cases No. 45 and 49 of the table are of this sort.

We have only space to present one or two cases in illustration of these remarks. The first one is interesting both on account of the length of time the perforation had existed, of the facility with which it closed, and of the perfect recovery of the hearing.

Case VII. (No. 48 of the table). Mr. J ——, a teacher in the University at Cambridge, æt. 23, with light hair and eyes, excellent general health, and no enlargement of the tonsils or cervical glands, requested my advice in March, 1852. He stated that two and a half months previously he was attacked with what, from his account, was probably otitis of the left ear. The pain at the time was excessive. It was relieved, however, by a discharge from the meatus. Soon after he called upon a physician who told him that the membrane of his ear was perforated. The fact was made evident enough by his being able to force air through the hole. He was ordered an acetate of lead wash for the ear; blisters were put on back of the ear; and by the advice of a second physician, an issue was opened on the arm. The discharge ceased, but he was deaf on the left side, and his ear felt uncomfortable. When I saw him, I discovered a perforation situated below the insertion of the malleus, and in the anterior portion of the membrane. It was of the size of the head of a large probe. The walls of the meatus were slightly red and also the remaining surface of the tympanal membrane. There was a slight mucous discharge. The perforation was not only evident to the sight, but bubbles of air and mucus were seen to be blown through it by a forced expiration. The edges of the hole were touched in the way already described with a solution of nitrate of silver, gr. xx to ℥j; and at the same time a leech was applied to the orifice of the meatus. A mild solution of the subacetate of lead was instilled into the meatus twice a day. Three days later, the edges of the hole were again touched with caustic; and after another interval of three days, the application was repeated for the third and last time. The diffused red hue of the membrane disappeared after leeching. The astringent wash was used till this diffused redness was no longer visible. In twelve days from the first application of caustic, the aperture was completely closed. The inflation of the cavity was distinctly heard, but no air could be forced through the membrane. There was no whistling rale. The hearing was completely regained. More than a year later I made a careful examination of the parts. There was no trace of the previous disease visible, and no cicatrix to mark the situation of the perforation. The meatus and membrane were in every way normal.

The following case illustrates the facility with which a tympanal aperture closes, when it has existed for some time, if the affection which led to it is relieved.

Case VIII.—R. F., an American lad, æt. 6, was brought to me for advice on account of an otorrhœa, complicated with an eruption about the ears. His general health was good. He had light hair and eyes, but no glandular swellings about the neck, nor other indications of a scrofulous diathesis. Two years previously I had treated him for a slight inflammation of the dermal tissue of the meatus, accompanied with otorrhœa, from which he rapidly recovered. About four days before the last attack he took cold. His throat was sore, and he had what his mother supposed to be influenza. In a day or two he complained of earache. The otalgia was relieved by a discharge from both ears. Simultaneously with the otorrhœa, an eruption appeared in and around the orifice of each meatus. The otalgia did not return after the commencement of the discharge, but he was quite deaf. I found a patch of eczema on both ears, which extended on each side outwardly into the hollow of the concha, and inwardly quite into the meatus. Each meatus was filled with purulent and moderately offensive matter. There was some tenderness on pressure. The fauces were congested, the tonsils slightly swollen, and a discharge was running from the nose. After syringing, the walls of the meatus were found to be red and swollen. Both membranæ tympani, as far as they could be seen, presented a radiated red appearance. The existence of perforation was not demonstrable.

Counter-irritation was employed back of both ears; syringing was ordered *pro re nata;* a mild cathartic given, and an ointment of lard, glycerine and lead applied to the eczema. Two days later, the swelling of the passages had diminished so as to admit of a better view of the tympanal membranes. A perforation of the size of the blunt end of a probe was discovered just below the insertion of the malleus on the left side. Its existence was proved by inspection, by the appearance of globules of air in the discharge, and by seeing liquid matters pushed through the hole, when the patient blew his nose. Decided counter-irritation was kept up behind each ear. In two or three days a solution of acet. plumbi, gr. iv to ℥j, was instilled into his ears, several times a day. In seven days the eczema disappeared. The otorrhœa ceased in a day or two later. In twelve days from the commencement of the treatment, the aperture closed, and soon after, the hearing was restored to its natural condition. In this case, the closure of the aperture occurred so soon after the resolution of the inflammation and the cessation of the discharge, that the application of caustic was not deemed advisable. It should be added that the inflammatory affection of the fauces and nose disappeared, *pari passu*, with the subsidence of the aural disease.

The next case is a remarkable instance of the spontaneous healing of a large perforation. It shows what the restorative powers of nature are capable of, and is an encouragement to endeavour to imitate her processes, in cases of perforation, where the prospect of a growing together of the hole is by no means flattering.

Case IX.—(No. 45 in the table.) J. F., an American, æt. 26, with excellent general health, was attacked with tenderness, pain and swelling of the right ear, in July, 1850. He had suffered, for several years, from occasional and offensive otorrhœa of the same side. The attack, just referred to, was quite a severe one, and accompanied with cerebral symptoms. He was leeched, blistered, freely purged, and kept upon a low diet. As soon as the swelling of the meatus had subsided sufficiently to admit of an exploration of the passage, I discovered a polypus adhering to the upper wall of the meatus. This was easily removed. Its root was freely cauterized, and it did not return. A large perforation was now apparent through which the patient forced air and bubbles without difficulty. It is unnecessary to give the details of treatment. At the end of three months, the inflammation and swelling were gone. *The perforation remained*, but in other respects the ear had recovered. I gave the patient some necessary directions with regard to the care of his ear, with especial reference to the perforation, and dissuaded him from further treatment. In Sept., 1851, a year later, he called upon me for advice on account of slight vertigo with uncomfortable sensations in the same ear. I was surprised to find, on examination, that no perforation existed. The aperture was healed. The surface of the membrana tympani was clearly visible, but the membrane itself was opaque and almost white like paper. The process by which the aperture was filled up had thickened the membrane. He was moderately deaf on that side; but notwithstanding this, his ear was in a much better condition than could have been expected.

I do not mean to imply, by the preceding remarks, that either acute or chronic perforations can *always* be healed. On the contrary, there are a great many which will refuse to close up, under the most careful management. I have repeatedly tried to stimulate the edges of old perforations, and excite inflammation enough to induce this closure, and found my efforts unavailing. But I have also had the satisfaction of seeing many grow together, after local treatment, which several years ago, I should have regarded as incurable. Chronic cases are the most unsatisfactory to treat. Acute cases are more easily controlled. As I have already insisted, the local management of acute perforation is all important. When an appropriate treatment is instituted sufficiently early, it will be found that a majority, instead of a minority of cases, will terminate in a complete restoration of the membrane. The cases, which have been given in detail, are all of them favourable. They were selected on that account. Unfavourable cases will readily suggest themselves in abundance to any one, and need not be detailed. The object of giving them is to show, not what can always be accomplished, but what can frequently be accomplished.

These remarks naturally bring us to the third subject of inquiry, suggested by the analysis, viz., the treatment of chronic and incurable perforation. When disease of the ear results in perforation of its tympanal membrane, and the aperture, either on account of its size or from other causes, refuses to heal, it is not safe for the patient to neglect his ear, as if it were an organ of no further use to him, or one with some incurable malady, which does best when let alone or least cared for. Neither should any physician, when consulted on account of deafness, which on examination he finds to be caused, in part at least, by this lesion, advise the patient to do nothing. It is very true that there may be no use in trying to induce healing of the perforation. It might be dishonesty or quackery to hold out promises of restoration of hearing. Yet the ear should have especial care, on account of its imperfection, and the dangers to which its imperfection exposes it.

The membrana tympani, besides other offices which it fulfils, serves as a protection to the delicate tissues and machinery of the middle and internal ear. When the membrane is ruptured, and especially when, as in most incurable cases, the perforation is of large size, this protection is taken away. Inflammation is much more likely to occur in the mucous membrane of the cavity in consequence of external changes of temperature. Particles of dirt, cold water, and foreign substances of various sorts, are more likely to get into the cavity of the tympanum, and produce serious trouble there. Patients themselves frequently persist in pouring into the meatus all sorts of oils, essential as well as fixed oils, and sometimes even substances like brandy and lye, and laudanum, and tobacco infusions, and even urine, for the purpose of "curing deafness." These articles, generally some patent nostrum, or the recipe of an old woman, or an Indian doctor, are of course poured through the aperture into the middle ear. Some of the severest instances of agonizing pain and of dangerous inflammation, with cerebral symptoms, which I have ever witnessed, have been caused in this way. It is a physician's duty, in cases of perforation, to guard his patient as far as possible, against these sources of danger, as well as to teach him how to take care of his infirm organ.

The treatment of incurable perforation, then, is of two kinds: first, the prophylactic treatment, or the care of a perforated membrana tympani; secondly, the prompt treatment of any affection which complicates perforation. Let us examine these points briefly in inverse order.

Perforation is frequently complicated with inflammation of the dermal tissue of the meatus; with polypus, or fungoid growths; with congestion, or catarrhal inflammation of the mucous membrane of the tympanal cavity; and it may of course be complicated with other aural affections. The above are the most frequent. They are generally attended with otorrhœa. Sometimes there is a slight, inodorous, but constant mucous secretion, which pours through a perforated membrane, and which seems to be kept up by the exposure of the cavity to the external air. But from whatever cause the otorrhœa may proceed, the meatus should be kept as free from any morbid secretion as possible. Gentle syringing with tepid water should be practised often enough, whether it be done once a day or half a dozen times a day, to keep the ear passage clean. No unhealthy discharges should be allowed to remain in contact with the undestroyed portions of the membrana tympani, or to burrow about in the tympanal cavity, or in the mastoid cells. The use of the syringe should be continued as long as the discharge exists, whether the latter continue for a week or two only, or for years. Patients should be instructed upon this point. They should be told that a perforated membrane is apt to keep up a discharge, and that they must not be weary of removing it. If they omit cleansing the ear, under the notion that it does no good—that the ear will do just as well without it, they expose themselves to the danger of an extension of the disease, and possibly to the danger of serious or fatal cerebral complications. Whatever other treatment besides syringing may be necessary, will depend upon the condition of the ear. Polypus, inflammation of the dermal tissues, catarrhal inflammation of the cavity, &c., should be treated in the same way as if perforation did not exist. It is not within the design of this paper to describe such affections or their treatment. If there are no complications, no local treatment beyond occasional syringing when there is a discharge, is needed. If there is no otorrhœa, the syringe should not be used.

The prophylactic treatment, or the constant care of a perforated membrane, is not less important than the management of any affection which may complicate it. A perforated membrane is an imperfect protector of the middle ear. The watchfulness of the patient should make up for the imperfection of the organ. The constant wearing of wool or cotton in the orifice of the meatus is more likely to be injurious than beneficial. It prevents a free and healthy circulation of air in and out of the meatus, and confines in the passage any discharge or unhealthy secretions which may accumulate there. But whenever a person with an aperture through the membrane is exposed to high winds or to unusual cold, or to draughts of air about the head, or to driving mists at any season, whether on land or sea, he should use some means of artificial protection for the affected ear. In such cases a plug of wool will answer to keep off the temporary exposure. A pad of silk or cotton, adapted to the hollow of the concha, which may be applied or removed at will, is better still. Cold water should never be poured into the ear. Whenever a river or sea bath is taken, the meatus should be carefully closed with cotton or other substance, so as to completely prevent the entrance of water. In short, all irritating substances should be carefully excluded. And especially should the patient be warned not to pour into the passage oils or washes, or other liquids, with the vain hope of regaining his hearing. Nothing of that sort should be used, except by the prescription of a physician.

Of late years, various attempts have been made to find a substitute for a destroyed or perforated membrane. Mr. Yearsley of London published in the *Lancet* in 1848, several articles upon the advantages resulting from applying a pellet of moist wool over a perforation, or of substituting it for a destroyed membrane. Since then Mr. Toynbee has endeavoured to make a substitute for the membrane out of vulcanized India rubber. He has invented several ingenious instruments for the application of his artificial membrane, and has not only published a series of articles explaining his discovery, but has published an account of it, with cases, in a separate pamphlet or monograph. Mr. Nottingham, of Liverpool, in his recent work on Diseases of the Ear, gives a number of cases illustrating the advantages resulting from such an artificial substitute. I have made the same application myself in a large number of instances, but my observation does not confirm the enthusiastic statements of Mr. Yearsley and Mr. Toynbee. I should speak of its advantages in much soberer language.

It must be conceded, however, that in many cases of perforated membrane, the stopping of the hole by any unirritating material, such as moist cotton, or wool, or India rubber, or gutta percha, or even paper, improves the hearing. By rendering the partition between the meatus and the cavity of the tympanum complete, by absolutely shutting off the latter from the former, the hearing is generally improved. Whatever may be the physiological explanation, the fact is indubitable. The improvement is sometimes moderate, and sometimes decided. But a great hinderance to the use of an artificial substitute is the difficulty of applying it, and after it is applied, of making it keep its position. Unless the patient can apply it himself, as a pair of spectacles can be put off and on, it is of little practical value. No person could go to a physician or aurist every day to have his hearing apparatus adjusted. After it is applied, it is apt to slip out of place. These practical objections to the employment of an artificial substitute for the membrane have not yet been overcome. When they are overcome, a substitute for the lost membrane will be of great value. A case occurs, now and then, of an individual who easily acquires the power of adjusting the substitute himself, and who is enabled to keep it in situ. For such persons I have found the simple pellet of cotton or wool decidedly preferable to the India rubber membrane of Mr. Toynbee.

The conditions which are most favourable to the use of moist cotton or other substitute for the membrana tympani have not yet been clearly recognized. So much of the auditory apparatus is hidden from view that it is impossible to determine these conditions by inspection alone. The following appear to be necessary. The perforation should be larger than a mere puncture through the membrane; it should occupy a quarter or a third of the membranous surface. On the other hand, the membrane should not be entirely destroyed. At least a bare rim, marking its insertion into the bony meatus, should be present. The Eustachian tube should be open. There should be a moderate amount of secretion from the cavity of the tympanum, enough to moisten it, but not enough to clog the parts with the discharge. There should not be a congested or granulated state of the mucous membrane of the cavity. Acute inflammation, or fungus, or polypus, should not exist. In a few words, the conditions, or at least some of the conditions, necessary to the use of any artificial membrane, are a hole of moderate size, patency of the Eustachian tube, moisture of the cavity, the absence of acute or chronic inflammation and of foreign growths. Moreover, the cotton or wool should be accurately adjusted to the perforation. A pellet not much larger than the hole should be selected. It should be moistened in water, or in glycerine and water. In some instances, olive oil answers a better purpose than anything else. Experiment alone can determine which is best. The less the pellet is worked over by the fingers in preparing it the better. A very convenient way of applying it is to pass a linen thread through the centre of a bunch of cotton or wool, and tie it so as to hold the bunch by the thread. The free ends of the thread can then be passed through a small and hollow silver or steel tube. A tube of the size of a large wire or of a probe is large enough. By means of the thread it is easy to keep the pellet close on the end of the hollow tube, and carry it down through the meatus to the perforation. When it is accurately adjusted, the tube is withdrawn and the cotton left. The thread, which lies in the meatus, is a convenient means of removing the pellet when it is desirable to do so. The operator can generally learn, by the sensations of the patient, when the cotton is properly adjusted. The patient *feels* that it is in the right place, and exclaims that he hears better.

As I have already remarked, too much must not be expected from this substitute for a membrana tympani. In many cases, it cannot be applied. In many cases where it can be applied it is of no use. In other cases, where appropriate conditions exist, it is of service. In a few cases, the advantage is very great. If it ever acts as a source of irritation in the passage, it should not be used. Whenever it is employed, it should be removed at night and a fresh one applied the next morning.

It is now time to bring this long article to a close. It has attained a length which the writer was far from anticipating when it was commenced. If it should serve in any degree, however slight, to draw the attention of observant physicans to the study of a lesion of the auditory apparatus, so important as perforation, and especially to perforation as one of the complications of the exanthemata most likely to occur, and often of possible prevention or relief, it will accomplish all that he expected from it.

## Art. II.—*Clinical Report on Pulmonary Tuberculosis; giving an abridged account of Twenty-Four Cases of Arrested Tuberculosis, with Remarks on the Management of the Disease.* By Austin Flint, M. D., Professor of Clinical Medicine and Medical Pathology in the University of Buffalo, N. Y.

Few subjects in practical medicine are more important than the management of pulmonary tuberculosis. It is sufficiently established that recovery from this disease may take place even when the lungs have been damaged to a considerable extent. This has been settled by autopsical researches, taken in connection with the *ante mortem* history, in numerous instances coming under the notice of competent, trustworthy observers. Since the means of diagnosis have been rendered precise and even demonstrative by the modern methods of physical exploration, clinical observations have shown that in a certain proportion of cases the deposit of tubercle, after a longer or shorter period, may cease, and the destructive processes incident to the progress of the disease, either be suspended or fail to occur. In short, the affection may be arrested; and if the injury done to the pulmonary organs be not completely repaired by the cicatrization of cavities, absorption of the exuded material, or by other modes, the condition of the patient in consequence of the non-progression of the disease is compatible with comfortable health. Now, what measures of management are most likely to effect or favour the arrest of pulmonary tuberculosis? Does it lie within the resources of medical art, by judicious measures of management to accomplish or promote this object? If there are not any known efficient means for attaining directly to this end, is it true that certain therapeutical agencies which have been, and still are employed, to a greater or less extent, in the management of this disease, exert an unfavourable influence, and hence the object may be indirectly favoured by avoiding them? I shall endeavour in this paper to contribute somewhat to the knowledge on which must rest our ability to answer these questions. I propose to select from my clinical records the cases of pulmonary tuberculosis in which the histories afford proof of an arrest of the disease, or a progress so slow as to be inappreciable. I shall present a brief account of each of these cases, and, afterward, institute a comparison as regards the points pertaining to management in which more or less of the cases agree. In these points of agreement lie the means which, it may be supposed, have been concerned in arresting the progress of the disease. Is it found that certain remedies entered into the treatment of all, or the greater part of the cases, then it is a fair presumption that to one or more of these remedies the favourable result is due in a greater or less degree, with this important provision, viz., that they have not entered into the treatment of these cases in common with those in which the disease has advanced steadily to a fatal termination. The same remark is alike applicable to measures of management relating to diet and regimen. The great question, in short, is, in what particulars do these cases, as regards management, agree among themselves and differ from other cases in which the progress of the disease is unfavourable? Other questions will arise in connection with the comparison, which I will not now anticipate.

The following inquiry may properly be premised: What constitutes adequate evidence of arrest or non-progression of the disease? In the living body we can judge concerning these points only by means of local and general symptoms, and, in some measure, by physical signs. With our knowledge of the laws of pulmonary tuberculosis, if a patient present for successive weeks and months a marked improvement in the symptoms referable to the lungs; viz., cough, expectoration, respiration, and also in the condition of the body as denoted by increase of weight and strength, the disease is certainly not progressing, and may be retracing its steps toward recovery. The latter may be considered to have taken place when pulmonary symptoms have been wanting for several months and a healthy condition of the body is restored. A comparison of the results of physical exploration before and after the arrest of the disease, will furnish evidence, first, of the correctness of the diagnosis, and, second, of the improvement which has taken place in the state of the pulmonary organs, as well as of the permanent effects of the disease upon these organs.

There are various pathological questions relating to tuberculosis which are not only interesting but important in their practical bearings. Such, for example, are, the nature of the exudation process, whether inflammatory or otherwise; the capability of the deposit re-entering the vessels by absorption; the relations of the local affection to a constitutional cachexia and diathesis; the retrogressive changes which the exudation undergoes, and the different modes in which recovery is effected. It does not fall within my plan to discuss any of these questions or others of a like character. I purpose, at present, to study the management of the disease exclusively in a clinical point of view, and to restrict myself to the cases which have come under my own observation. The cases which I am able to gather exemplifying arrest of the disease are twenty-four in number. The collection is not large, but in view of the well known intrinsic tendency of the disease (according to past experience) to advance steadily onward to a fatal termination in the vast majority of cases, the number is not insignificant. It is highly probable that my records would have supplied a greater number, were it not that in a pretty large proportion of the cases of the disease coming under my notice, the patients were from a distance, and I have not taken pains to procure information respecting the subsequent history. As it is, the collection is, perhaps, sufficiently large to render tedious an account of the cases severally. I shall endeavour to obviate this as far as possible by condensing the histories and omitting details which are not important with reference to my present object. The value to be attached to the account of these cases individually, and to the results of an analysis of them, will of course depend on the correctness of the diagnosis. Until within late years, instances of supposed recovery from phthisis were unreliable in consequence of the want of certainty in the means of determining the presence of the disease. This uncertainty has been removed by the discovery and improvement of the physical exploration of the chest. Physical signs in conjunction with symptoms, render the diagnosis of pulmonary tuberculosis positive in the vast majority of cases. I shall include in this collection only cases in which the diagnosis rests on the conjoined evidence of signs and symptoms. With some exceptions, the results of exploration of the chest, together with the previous history and existing condition of the patient, were noted prior to the arrest of the disease. In a few instances, however, the cases came under observation subsequently to the arrest, and the diagnosis was made retrospectively; that is, the physical signs and the previous history were deemed sufficient to render it positive that the patient had been affected with tuberculosis.

CASE I.—*Abundant Tuberculous Deposit; Arrest and Recovery; Examination five and a half years after the case came first under observation.*—Ellen Thornbury, unmarried, aged 19 years, came under observation first in Dec., 1850. Not aware of any hereditary predisposition to phthisis in her family. Was attacked about two years previous with hæmoptysis, not profuse. Slightly bloody expectoration continued for three weeks. Was in her habitual good health up to four or five months prior to the hæmoptysis, and did not consider herself ill at the time this event occurred. Prior to this event was less active and buoyant than usual, but does not recollect that she had cough. Had been somewhat hoarse and was conscious of a ticking sound in respiration at night. Was always delicate and subject to heavy colds in the spring season especially.

She was engaged in weaving when the hæmoptysis occurred, and had worked hard. At the moment when she began to spit blood, she was carrying a pail of water. Had been engaged in school teaching previous to this attack. She kept the bed for three weeks after the hæmoptysis, and had for a week stitch pains in the side. She does not recollect that she coughed until the following spring, when she noticed a cough and a thick yellowish expectoration. During this spring (1849), she had a second attack of hæmoptysis, and six weeks afterward, a third. Raised a little blood on the other subsequent occasions, and still another recurrence took place in the autumn of 1849.

She has lost flesh moderately, but does not appear emaciated. Her aspect is not morbid. The cheeks present some colour. Has occasionally had chilly sensations. The appetite has generally been good. Was subject to diarrhœa during the last summer and autumn. For the last two weeks has perspired at night.

She was attended by a botanic practitioner for the eight or nine months following the first attack of hæmoptysis. In June last she went to a water-cure establishment and remained there five weeks. She continued the water treatment—the wet sheet, hip-baths, etc.—for three months afterwards. Has not worn flannel since leaving the water cure. The menses have been absent since June last. She was regular prior to the first hæmoptysis, but irregular since that event.

The pulse is 120, small, vibratory. Respiration 25, and not laboured. She experiences want of breath on exercise.

She sits up all day; has lost strength but is not very weak.

The foregoing account was noted when she came under observation in Dec., 1850, together with the following physical signs:—

Dulness in left supra and infra-clavicular regions; equal resonance at the base of the chest and laterally on the two sides. Marked dulness over left scapula.

Respiration in front, left side, superior third, feeble, non-vesicular, distantly bronchial; right side more evolved and vesicular. Behind, over the left scapula, feeble and non-vesicular, expiration prolonged; slight crackling and occasional sibilant rale. Less superior-costal movement on left side obvious to the eye. The voice slightly bronchophonic at the summit of left side in front and behind.

She left the hospital Jan. 11.

In Jan., 1852, this patient again came under my observation. She had progressively improved in strength during the year that had elapsed, and had gained in weight considerably. She presented a healthy aspect. The cough and expectoration had steadily diminished, and at this time the matter expectorated was quite small.

I had prescribed a year previous the cod-liver oil, which she continued to take most of time during the intervening period. She had taken in all, three gallons of the oil.

She has been in the country during the past year, occupied in doing housework, and more or less out of doors. She has at no time been confined to the bed.

The appetite and digestion were good. The menses had returned six weeks before, and again the day previous to this examination. The pulse was 80 and the respirations 20 per minute.

The physical signs were as follows. Summit of left side of chest depressed, and expansibility lessened. Respiratory murmur at left summit in front feeble, the inspiration shortened, more acute than on the right side, and no expiratory sound. Behind in left inter-scapular space and at lower angle of scapular, a murmur with both acts of respiration, resembling a friction sound. Marked dulness on percussion at the summit of the chest on left side, in front and behind.

This case came next under observation in August, 1855. She applied to me at that time for a certificate of sufficient health to warrant her being received as a candidate for admission into the order of the Sisters of Charity. She presented a healthy appearance, having considerable colour in the cheeks. She had slight cough and expectoration in the morning, and had recently had a very slight hæmoptysis.

The physical signs noted at this time were as follows. Upper third of chest on the left side, notably depressed. Resonance on percussion notably less at the left than at the right summit. The inspiratory sound notably less intense at the left summit than at the right, but no marked disparity in pitch or quality. On the left side a prolonged sibilant rale in expiration, and no expiratory sound appreciable on the right side. Vocal resonance notably greater on the left than on the right side.

I saw the patient again in July, 1856. Her aspect denoted health, and she reported well, being free from any symptoms of pulmonary disease.[1]

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[1] This case is referred to in my work on Physical Exploration and the Diagnosis of Diseases Affecting Respiratory Organs, page 508.

*Remarks.*—This is one of the most striking of the cases contained in this collection. The patient presented evidence of an abundant tuberculous deposit, and at the first examination had well marked tuberculous fever, the pulse being 120. Five and a half years afterwards, the pulmonary symptoms had nearly disappeared, and she was much disappointed that I did not deem her prospect of health sufficiently good for her to undertake the duties of a Sister of Charity. A year afterwards, the pulmonary symptoms had entirely disappeared, and she reported quite well, the physical signs showing that the lungs had received a certain amount of permanent damage, but not enough to compromise health. Although pains were not taken to determine the existence of excavations, it can scarcely be doubted that they occurred. Dating from the first hæmoptysis, the duration of the disease was between seven and eight years. The processes of recovery occupied a period of about six years.

The only medicinal remedy employed in this case was the cod liver oil. A considerable change was made in the habits of life. Leaving the duties of a school teacher and the subsequent occupation of weaving, she engaged actively in housework, and was often in the open air. She persisted in the latter duties, and in not considering herself an invalid. No antiphlogistic or debilitating measures were at any time employed.

This case possesses so much interest that I have given to it greater space than I shall generally accord to the cases which will follow.

Case II.—*Small Tuberculous Deposit; Arrest and Recovery.*—Dr. M. applied to me for an examination of the chest and advice in September, 1851. The following account is from the record made at that time.

He is about 22 years of age. Has recently obtained his medical degree. He has applied himself very closely to medical studies, and has also been occupied as an operator in a telegraph office. His mother died at 40 years of age with what was called quick consumption. He lost a sister 13 years of age with some pulmonary affection. His father is living.

He had slight hæmoptysis some time ago; has looked pallid for some months and lost weight. Has not now and has not had cough. Respirations not accelerated.

On bathing day before yesterday had slight recurrence of hæmoptysis. He noticed that the action of the heart was much increased at the time.

At the examination the pulse was much accelerated, which may have been due, in a great measure, to nervous excitement. Sounds of heart normal. Distinct dulness on percussion over left clavicular and infra-clavicular regions, and still more marked over the left scapula. No spinal curvature. On auscultation, slight but distinct crackling in both infra-clavicular regions, during the inspiratory act: a species of dry, slowly evolved crepitation.

I advised him to throw aside his books and go into the country for several months, devoting himself to out-door sports.

Three months afterwards I repeated the examination of the chest. In the mean time he had been in the country, hunting, fishing, etc. His health had become excellent. He had gained obviously in weight. He was adequate to perform as much active exertion as most young men of his age. For example, he rowed a boat a short time before sixteen miles. He had, however, as he thought, contracted a cold three weeks before, and he had some cough and mucous expectoration. Dulness on percussion in the left infra-clavicular region still existed, and over the left scapula. In the left infra-clavicular region a crumpling sound as if produced by dry parchment existed both in inspiration and expiration, heard during the whole of both acts. The same, but less in degree, existed on the right side.

He had just begun to take cod-liver oil. I advised its continuance, and also habits of active exercise.

The following winter he passed at the south, and very much in the open air. He was then appointed assistant surgeon in the army, and has passed the last four years on the frontier in Texas, performing oftentimes laborious out-door duties. His health has been good. He has been entirely free from symptoms of pulmonary disease. I received this statement from him a few days prior to the time I am now writing, and his appearance denoted perfect health.

*Remarks.*—The evidence afforded by the symptoms and physical signs of a small tuberculous deposit in this case is positive. A speedy arrest followed change of habits, exchanging sedentary pursuits for active exercise out of doors. The recovery was complete, the patient having now remained well for nearly six years.

Aside from the cod-liver oil, which was continued but for a short time, the management consisted in change of habits of life as regards out-door exercise.

CASE III.—*Small Tuberculous Deposit; Arrest and Recovery; no Management.*—Dr. B., of Gowanda, Erie Co., N. Y., requested an examination and advice in May, 1853. His age was 28. Mother died of phthisis. Been engaged in medical practice three years.

In October, 1852, after exerting himself in throwing down some hay from a scaffold, he had slight hæmoptysis. Up to that moment he had supposed himself to be in perfect health. No cough or other pulmonary symptoms preceded or followed this attack of hemorrhage

In Jan., 1852, he had a recurrence of the hæmoptysis. This occurred while he was perfectly quiet, sitting in his office. The hemorrhage was more abundant than before, amounting to two ounces. No cough or other symptom succeeded. More recently two slight attacks of hæmoptysis had occurred. He notices that he is a little hoarse. Has had slight soreness in the chest, first on one side and next on the other. His weight has not diminished since the first hæmoptysis. The pulse is not and has not been accelerated. The same is true of the respirations.

On examination of the chest, relative dulness exists over the right clavicle, and not elsewhere. The respiratory murmur at the left summit is well evolved and vesicular, no expiratory sound being appreciable. On the right side it is relatively feeble, and a dry, weak crepitation accompanies both inspiration and expiration, obscuring the characters belonging to the murmur. Slight vocal resonance at the summit on the right side, and none on the left.

I advised him to attend to hygiene, and, if symptoms of tubercle should become more evident, to change his residence for a southern climate.

In September, 1854, Dr. B. called upon me and reported himself to be in as good health as he had been for several years. He had increased in weight. Had had recurrence of the hæmoptysis four times, but very slight with one exception. Has no habitual cough or expectoration. Has continued to practise in Gowanda up to the date of this record, 1st Sept., 1854. On an examination of the chest, I found marked dulness over the right clavicle. The respiratory murmur at the right summit was feeble and deficient in vesicular quality, higher in pitch than on the left side, and a feeble, prolonged expiration was appreciable (broncho-vesicular respiration). At left summit the respiratory murmur was vesicular, well evolved, and no appreciable expiratory sound. No rales on either side.

*Remarks.*—The evidence of the physical signs, in conjunction with the repeated attacks of hæmoptysis, will probably be deemed sufficient to establish the presence of a small tuberculous deposit near the apex of the right lung. The indications of the tuberculous cachexia, exclusive of the physical signs and the hæmoptysis, were wanting. The arrest of the disease may be said to have been spontaneous. The cachexy was exhausted, as it were, by a small exudation, and the latter speedily passed through retrogressive changes, or remained quiescent.

There was, in reality, no management in this case, the patient not only refraining from remedies, but not altering materially his habits of life. His duties as a practitioner in the country, of course, involved much exercise in the open air with considerable exposure.

Case IV.—*Pulmonary Tuberculosis of Twenty-seven Years' Standing; the Disease Non-progressive; Recovery not taking place.*—This case came under my notice in March, 1855, at Louisville, Ky. The patient, Mr. O., was 51 years of age. His first hæmoptysis had occurred twenty-seven years before. Prior to that hemorrhage, he had been affected with cough, and had for many years been a dyspeptic. He raised at the first hemorrhage about a gill of blood. Since then, hæmoptysis has recurred about half a dozen times. The last attack was during the winter of 1854–5. The hemorrhages have always been slight. He had never been free from cough since the first attack of hæmoptysis. For many years the cough and expectoration had remained about stationary. He thinks he expectorates about a gill in twenty-four hours. His weight is about 108 pounds, and has varied very little during the last twenty years. He weighed 125 pounds before the first hemorrhage.

He has kept about ever since the first hemorrhage, having been in business, successively, as an apothecary, a seller of dry goods, and a wholesale grocer. For many years he has only taken some slight palliative remedies, and has not had medical advice.

Both parents were free from pulmonary disease.

His appetite and digestion have generally been good.

The chest is considerably distorted. The spine is curved laterally; the sternum at the upper part projects, and the projection extends on either side, but most on the right. Percussion sound relatively dull on the right side; the signs obtained by auscultation are not noted.

*Remarks.*—Although I have failed to note the physical signs, with the exception of dulness on percussion on one side, there can hardly be room for doubt that this person was affected with tuberculosis twenty-seven years before he came under my notice. It is probable that an arrest of the disease had long since taken place, but the pulmonary lesions were of a nature to preclude complete recovery.

This case had never received any medical management. The patient had taken only some simple palliative remedies, without placing himself under the care of a physician. Nor did he at any time materially alter his mode of living. His habits were temperate and regular, and he persistingly devoted himself to business as far as his strength would permit. At the time of my record of the case, and when I last saw him, a year afterwards, he did not consider himself an invalid. The arrest of the disease in this instance must have been determined mainly by an intrinsic tendency to that result.

CASE V.—*Pulmonary Tuberculosis of Eighteen Years' Standing; the Disease Non-progressive; Recovery not taking place.*—Between this case and the preceding there is a striking coincidence, and it is a curious fact that the persons are husband and wife. This case also came under notice in March, 1855.

Mrs. O. was then 45 years of age, and had been married twenty-one years. Had never had children. Mother died of apoplexy, and father met with a violent death.

She was attacked with hæmoptysis eighteen years before, when she was 27 years of age. This was three years after marriage, her husband having then been tuberculous for several years. Prior to this hemorrhage she had had good health, save that she was subject to paroxysms of sick headache. The hæmoptysis has recurred frequently ever since. She has averaged eight or ten attacks yearly. The quantity of blood lost has generally been small, but sometimes copious. She has never been confined to the bed except for a few days at a time, when the hemorrhage has been considerable, or when affected with either pleurisy or pleuralgia, which for several years recurred every winter, lasting for two or three days. For the last seven years she has been exempt from the latter attacks.

Up to four years ago, the menses were regular, but since then they have been more or less irregular.

She has had cough and expectoration ever since the first hæmoptysis; none before. These symptoms have remained about stationary; if there is any change within the last few years, there has been some improvement. The quantity of expectoration daily is about half an ordinary teacupful. It occurs mostly in the morning.

Her weight is within a few pounds of what it was prior to the first hemorrhage. She weighs about 130 pounds.

Generally the appetite and digestion have been good.

About twelve years ago she had night-sweats for several weeks. She remained within doors all the winter of that year.

She states that if she is in the habit of going out of doors daily, she feels no inconvenience from want of breath; but after remaining in the house and sewing for several days in succession, she lacks breath on taking exercise.

She has taken very little medicine, following the example of her husband in this respect. She has never had medical attendance, except when attacked with pleurisy or copious hemorrhage.

There is lateral curvature of spine in this case. The right side is relatively dull on percussion at the summit, in front and behind. Right clavicle is projecting; vocal resonance marked at the right summit, and absent at the left. Respiratory murmur more evolved on the left side; sounds and impulse of heart normal.

This patient considered herself in tolerable health, taking charge of a family with six boarders.

*Remarks.*—The remarks appended to the preceding case are equally applicable here.

Case VI.—*Small Tuberculous Deposit; Arrest and Recovery.*—A. C., aged 19, consulted me, May, 1852, for a cough which had existed for three weeks. The cough was at first dry, but had recently been accompanied by expectoration of frothy mucus. He had not been as well as usual for some time prior to the appearance of the cough, but there had been no definite ailment. He was serving his time as a printer's apprentice, and for a couple of years had worked steadily as a compositor. The pulse was accelerated. Had not noticed any want of breath on exercise.

On examination of the chest, at the summit of the left side, the percussion-sound was relatively dull; the murmur of inspiration more acute, and the vocal resonance greater than on the right side. No râles.

I advised him to quit work, and prescribed for the cough a solution of the sulphate of morphia dissolved in the syrup of senega.

On the 16th of June following, he again consulted me. He had remained away from his business for two weeks, and during that time improved rapidly. His cough, which had ceased, again returned a few days previous, and he complained of a sense of debility. Repeating the examination of the chest, I found marked dulness on percussion in the left clavicular and infra-clavicular regions; the respiration at the summit of the chest on the left side was broncho-vesicular with an expiratory sound higher in pitch than the inspiratory. On the right side the respiratory murmur was feeble, vesicular, and no sound of expiration. The pulse was 76. Respirations, 28.

I advised him to give up the occupation of a printer, and to be as much as possible in the open air. In addition to the cough mixture mentioned already, I prescribed a solution of the citrate of iron and the sulphate of quinia.

This patient adopted my advice to relinquish the business of a printer, and he obtained a situation as salesman in a paper warehouse, where he has since remained. The pulmonary symptoms soon disappeared; he regained his strength and healthy aspect, and is now in good health.

A brother of this patient died under my care with phthisis, eighteen months prior to the date of the first consultation.

*Remarks.*—The history and physical signs sufficed for the diagnosis of a small tuberculous deposit. An arrest of the disease followed speedily the change from the confinement to the printer's form to an occupation involving more exercise both in and out of doors, this change being preceded by a vacation devoted to recreation.

No medical treatment was pursued in this case except the remedy to allay cough, and the solution of iron and quinia.

The recovery has been permanent as well as complete, more than five years having elapsed since his restoration to health.

Case VII.—*Small Tuberculous Deposit; Arrest and Recovery.*—Mr. N. came under my observation while I was engaged in making a series of examinations of the healthy chest in the winter of 1854–5. He was then attending medical lectures at Louisville, and had been a practitioner of medicine for four years. Father not living, but did not die with a pulmonary affection. Mother still living. His age was 29.

He enjoyed good health up to about seven years prior to the date of my record, Jan. 1855. He was at that time engaged in school-teaching. After continuing this occupation for a year or so, his health suffered. He lost in weight; his appetite was impaired, and his muscular strength diminished. He had a slight hæmoptysis six years prior to the date of my record, not preceded or accompanied by cough or any other pulmonary symptoms. Had no medical treatment. Took more exercise, but continued school teaching. He had a recurrence of the hemorrhage four or six months afterwards, more abundant than the first. Still no cough nor other pulmonary symptoms save a sense of constriction in the chest. In the mean time, his general health had not improved. These attacks were in 1848. He attended medical lectures at Lexington during the winter of 1849–50. During this winter he had a cough with small mucous expectoration and a sense of constriction felt especially in the left side of the chest. After the close of the lectures he had a third attack of hæmoptysis, which was quite profuse; he thinks he raised a pint of blood. He continued to raise blood for several days after this attack.

Shortly after this he engaged in medical practice in the country. His practice lay in a rough portion of the State of Kentucky, near Frankfort. His habits became very active. He continued in active practice up to his coming to Louisville to attend lectures in the autumn of 1854. His cough ceased soon after he commenced practice. He became strong and vigorous, gained in flesh, and had no symptoms of pulmonary disease afterwards.

He had no medical treatment at any time, except that he took a little acetate of lead, opium and tannic acid during the last hemorrhage. His aspect was perfectly healthy. His weight was about 155 lbs. His habits of living were temperate.

On examination of the chest, the following signs were noted: Chest symmetrical; the superior costal movement on forced breathing somewhat greater on the right side; slight but distinct relative dulness at the summit of the left side in front, over the scapula behind and in the interscapular space. At the base of the chest, behind, the percussion-sound equal on the two sides. The respiratory murmur on the left side, at the summit in front, and over the scapula, scarcely appreciable on forced breathing, even with Cammann's stethoscope. On the right side, tolerably evolved and vesicular. Below the scapula the murmurs were evolved and equal on the two sides. Vocal resonance everywhere more marked on the right side.

*Remarks.*—The diagnosis in this instance was retrospective; but taking the physical signs in connection with the history, the occurrence of a deposit of tubercle six years prior to the examination can hardly be doubted. An arrest of the disease in this instance followed an exchange of the confinement within doors, and sedentary habits of school teaching and attending medical lectures, for the duties of a medical practitioner in a rough country, requiring him to be in the open air on horseback much of the time, and involving not a little exposure. This constituted the sole management. The recovery was in this case complete and permanent.

Case VIII.—*Small Tuberculous Deposit; Arrest and Recovery.*—Mr. T., of Lewistown, N. Y., consulted me in June, 1848. He was 20 years of age, and was pursuing the study of the law. His health had not been good since an attack of bilious fever the preceding spring. A dry cough had existed for some weeks. He had lost much in weight, and his countenance was pallid. He was able to be about, although considerably debilitated. Appetite variable. Complained of no embarrassment of respiration, but panted after exercise, and tranquil respiration was hurried, with dilatation of the nostrils. The pulse was accelerated, exceeding 100 per minute, and had a vibratory, thrilling character.

On examining the chest, no obvious disparity between the two sides in the percussion resonance was found; but in the left infra-clavicular region there was a distinct, although slight crepitation at the end of the inspiratory act.

With the foregoing physical signs, although few, in view of the marked symptoms in the case, the patient was regarded as tuberculous. He was advised to throw aside his books and live as much as possible in the open air. Tonic remedies were prescribed.

The patient was referred to me by Dr. Eddy, of Lewistown, and nine months after the date of the examination, Dr. E. informed me that he had completely regained his health, had engaged in business, and gone to California.

*Remarks.*—The physical sign noted in this case may not seem sufficient to establish the correctness of the diagnosis. The evidence is certainly less complete than in the great majority of the cases in this collection, but taking the facts contained in the history into due consideration, I think that there is not much room for doubt. I may remark that this case came under my observation more than nine years ago, when I had less confidence in my practice of percussion than now, and was not fully aware of the importance of carefully percussing over the scapulæ.

The management in this case consisted in changing the habits of a student for out-door exercise, and the use of tonic remedies. This case occurred before cod-liver oil came into vogue.[1]

Case IX.—*Pulmonary Tuberculosis; Arrest of the Disease.*—Judge G., aged 37, consulted me in July, 1857. His parents are both living. He had seven brothers and two sisters, and has lost a sister and brother by consumption.

In 1851, he had cough and expectoration for several months, with loss of weight and night-sweats. All these symptoms disappeared on leaving his office duties, which had been laborious and confining, and travelling for several weeks in the winter season, although much exposed to inclement weather. He took no remedies except some simple palliatives of the cough. Last winter (1856–7) he had recurrence of cough, and he passed several months in South Carolina, taking much out-door exercise. He returned to this city much of the way on horseback. He gained in flesh during his southern sojourn, exceeding his weight at any previous period of his life. Prior to this winter he had for several years been constantly occupied by his judicial duties.

At the time he consulted me, his aspect was healthy; he felt no deficiency of breath on exercise; the appetite and digestion were good; the pulse and respiration not abnormal, but he had slight cough and expectoration. He had slight hæmoptysis during the last winter, never before.

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[1] Since this article was written, the father of this patient has informed me that he is living and well at this time, nine years from the time he came under my observation.

On examining the chest there was depression at the right summit, and relatively less expansion on forced breathing. Distinct dulness on percussion on the right side in front and behind. No spinal curvature. Respiratory murmur at summit of left side well evolved, vesicular, and no sound of expiration appreciable. On the right side, in front, the inspiration notably more acute and less vesicular than on the left, but no expiratory sound appreciable (broncho-vesicular respiration). Vocal resonance about equal on the two sides. Whispering souffle notably more intense at the left summit.[1]

Behind, over both scapulæ, the respiratory murmur feeble, but more evolved on the left side. An expiratory sound appreciable on both sides, and higher in pitch than the sound of inspiration.

*Remarks.*—The evidence from the physical signs of a deposit of tubercle at the summit of the right lung, is conclusive; and, in view of the history, it can hardly be doubted that the deposit existed in 1851. His condition of late years, and at the present time, shows the disease to have been non-progressive.

In this case no medicinal remedies have ever been employed, excepting some simple palliatives for the cough. He tried to take the cod-liver oil, but it offended the stomach, and he very soon laid it aside. He pursued this course under the advice of my friend and colleague, Prof. Hamilton. He has lived generously, taking frequently a little wine or spirit. Although an arrest of the disease has evidently taken place, the recovery cannot be said to be complete, inasmuch as he still has a little cough and expectoration. He is, moreover, stouter, and presents a more healthy aspect than for several years before the occurrence of the tuberculous deposit in 1851.

Case X.—*Pulmonary Tuberculosis; Ancient Pleurisy produced by an Injury to Chest; Arrest of the Tuberculous Disease, and Recovery.*—R. P., aged 31, ship carpenter, formerly seaman, came to me for an examination of the chest and advice, September, 1856.

About four years before, he had received a severe injury at sea on the lower part of the right side of the chest. He raised blood the day after receiving this injury. He felt pain and weakness in the side for some time, but had no medical aid. From the examination of the chest it is probable that pleuritis with liquid effusion followed that accident. After this he had good health, but two or three times had hæmoptysis without cough or any other pulmonary symptoms.

He had never been troubled with cough till two months prior to my examination. During this period it had existed constantly, and had progressively increased. At first the cough was dry, but he soon began to expectorate, and the quantity of expectoration had steadily increased. The matter expectorated was quite consistent. He thought it would amount to a gill in the twenty-four hours.

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[1] The *souffle* produced by the act of whispering, or whispering bronchophony, is often a valuable sign, to which I have called attention in my work on the Diagnosis of Diseases Affecting the Respiratory Organs. Since the publication of that work, my observations have satisfied me that this souffle is normally more acute, *i. e.*, higher in pitch at the summit of the left than of the right side, but generally more intense on the latter. I avail myself of the present opportunity to make this statement, which is of practical importance.

For five or six weeks he had had diarrhœa daily, but as regards this symptom he had improved. He had taken several patent medicines for the diarrhœa which had occupied his attention more than the pulmonary symptoms. He had had lancinating pains at the summit of the chest, shooting through beneath the scapula. These had occurred on both sides, but most on the right. He had lost considerably in weight, as he thought about 20 lbs., within two months. He had observed some want of breath on exercise.

He had not given up work except for a few days, and expected to return to it the next day. He had sweat at night occasionally. The pulse was not accelerated; the respirations 20 per minute, and not labored.

*Physical Signs.*—The right side somewhat contracted. The right interscapular space diminished, but the nipple and shoulder not lowered. The right infra-clavicular region depressed and mobility less than on the left side. The left scapula more elevated than the right on forced breathing. Dulness on percussion marked at the right summit, in front and behind. The whole right side relatively dull, but the disparity much greater at the summit than below. At the right summit in front and behind, the murmur of inspiration almost inappreciable with Cammann's stethoscope, but a prolonged, acute expiration heard both in front and behind. On the left side a vesicular inspiration well evolved, with scarcely an appreciable sound of expiration. Vocal resonance everywhere more marked on the right side, but the disparity much greater at the summit, in front and behind, than below. The whispering souffle notably more acute, intense, and nearer the ear on the right than on the left side, both in front and behind.

In view of the signs and symptoms, the diagnosis was tuberculosis of the lungs, and the patient was advised to try the cod-liver oil; to live generously, taking a little spirit daily, and to continue in his occupation. The patient was strictly a temperance man. For the diarrhœa a mixture of the syrup of krameria, paregoric elixir, and the chalk mixture, was prescribed.

October 13th, 1856, this patient reported improvement as regards cough, expectoration, and strength. The diarrhœa was promptly relieved. The appetite was good. He had not begun to take the cod-liver oil, but promised to commence it at once; nor had he taken spirit as advised. Had kept steadily at work since the date of the previous record.

December 23d, 1856, this patient had gained considerably in weight. He presented a ruddy, healthy aspect. He had no habitual cough, and was competent to do full work as a ship carpenter. His business involved exposure as well as severe labour, requiring him to be in the open air, and much of the time, as he stated, he worked with his coat off. Excepting some few days occasionally, he considered himself a rugged man. He took the cod-liver oil for several weeks, and discontinued it because it appeared to act as a laxative.

This patient continued to work during the whole winter, remaining in good health, and in spring last, emigrated to Kansas.

*Remarks.*—A deposit of tubercle in this case occurred during the summer season, and the arrest took place in the following autumn, the patient pursuing, unremittingly, the business of a ship carpenter, working laboriously in the open air, in all kinds of weather, and much of the time in his shirt sleeves.

The only remedy prescribed was the cod-liver oil, which he began to take after an improvement had commenced and continued for a few weeks only. He took spirit for some time sparingly, to which he had previously been unaccustomed.

Case XI.—*Small Tuberculous Deposit; speedy Arrest and Recovery.*—Mr. D., aged 22, clerk in a clothing store, was examined by me, August, 1856. Two months prior to this date he had a cough for several days, which ceased entirely, and he regarded himself well until a week before the examination, when he had an attack of hæmoptysis. The hemorrhage recurred for three successive nights, and then ceased, but he continued to expectorate for several days bloody mucus. He had considerable cough in the morning with small expectoration. His aspect was not morbid. He was not aware of having lost in weight. The appetite was poor.

Both parents are dead. The father died many years ago, he did not know with what disease. The mother died of cholera. The pulse was 80, somewhat vibratory, compressible. The respirations 20.

*Physical Signs.*—No spinal curvature. Very distinct dulness on percussion at the summit of the right side in front and over the scapula. Equal resonance below the scapula on the two sides. Respiratory murmur on the right side, in front and behind, relatively feeble, the inspiratory sound deferred, and no appreciable sound of expiration. A subcrepitant râle at the summit, in front, on the right side. Vocal resonance greater on the right side. Less superior costal movement, on forced breathing, on the right than on the left side.

I advised this patient to exercise in the open air as much as possible, and on the approach of cold weather to change his residence to a milder climate. The latter advice he did not adopt. I prescribed no medicine.

*October* 28, 1856, this patient reported quite well. He was entirely free from cough. His aspect was healthy, and he had gained in weight.

*May* 6, 1857, the patient reported the same. He was entirely free from any symptoms of pulmonary disease and appeared quite well.

*Remarks.*—A speedy arrest of the disease took place in this instance. He took no remedies. The recovery, for the present, appears to be complete.

Case XII.—*Small Tuberculous Deposit; Coexisting Emphysema; the Tuberculous Disease Non-progressive.*—Mr. R. came to me to examine the chest, August, 1856. I had made two previous examinations, the first time five years previous, and the second time a year before. I failed to make notes of these two former examinations. He stated that on the first examination I found no signs of disease, but on the second I told him that there was a small tuberculous deposit at the summit of the left lung. He had had hæmoptysis shortly before the last examination. He is an intelligent man, and his recollection of my statements of the results of these examinations is doubtless reliable. After the last examination I prescribed a preparation of iron, but he did not take it, and had had no medical treatment in the mean time. His age was about 25. His business, forwarding agent, required him to be actively employed in the open air; he was accustomed to live freely and recklessly, indulging occasionally in debaucheries.

Since the last examination he had had more or less cough and moderate expectoration in the morning. At times, he was obliged to cough repeatedly and with some violence before expectorating, but at other times the expectoration was easy. He was short-winded on exercise.

*Physical Signs.*—Clear percussion resonance on both sides in front, but on the left side vesiculo-tympanitic in quality. Behind, relative dulness over the right scapula. Resonance clear and equal below the scapulæ. On the left side the supra and infra-clavicular regions are fuller than on the right side. The superior costal movement slight on both sides even on forced breathing, but somewhat greater on the right side. No râles anywhere. The respiratory murmur well evolved at the right summit in front, and relatively quite feeble at the left summit. A feeble, prolonged acute expiratory sound on the left side. Vocal resonance slightly greater on the left side. The whispering souffle distinctly more intense and acute on the left side.

Over the scapula the respiratory sound almost dull on the left side; feeble on the right side, with a prolonged, acute sound of expiration. Vocal resonance and whisper almost null on the left side, and well marked on the right side.

The condition of this patient since the last examination I have not learned.

*Remarks.*—The foregoing physical signs, taken in connection with the history, are considered as showing the presence of a tuberculous deposit, coexisting with emphysema of the upper lobe of the left lung. It is assumed that the physical evidence existed a year before; viz., at the second examination. The condition of the patient at the last examination showed the tuberculous affection to be at least stationary. Excepting slight cough and expectoration, the patient was in good health and actively engaged in business.

The arrest of the disease in this instance took place without any influence from management. The patient took no remedies and made no change in his habits of life, continuing in active out-door business and given to dissipation.

Case XIII.—*Pulmonary Tuberculosis; Arrest of the Disease, and Apparent Recovery.*—J. H. T., aged 24, printer, consulted me Nov. 15th, 1856.

In the spring of 1854 the lymphatic glands of the neck became swelled, and slowly suppurated. The neck was covered with cicatrices presenting the characters of scrofula, and occasionally there was still a little discharge. Prior to 1854, always had good health; no scrofula in early life. Parents free from tuberculous disease.

In the spring of 1855 he was suddenly attacked with hæmoptysis, without any obvious exciting cause. Prior to this event he had had no cough or other evidence of the pulmonary disease. Cough and some expectoration followed, and he had frequent repetitions of hæmoptysis during the summer of 1855. In the latter part of this summer he consulted S. S. Fitch, of New York, who gave him medicines of a tonic nature; advised him not to wear flannel; to go out as much as possible without an overcoat, and to be in the open air a good portion of the time. He took the remedies during the following autumn and winter, and followed these directions as regards dress and regimen. He passed the winter on a farm in the country. He discontinued for several months the use of tobacco by direction of Dr. Fitch. His health constantly improved. He had no more hæmoptysis. Cough and expectoration gradually ceased, and he regained his usual weight. During the previous summer he had fallen in weight from 160 lbs. to 130 lbs.

The summer of 1856 he passed in this city, and was occupied in business out of doors, viz., obtaining subscribers, etc., for a daily paper. He resumed the use of tobacco moderately. Was accustomed to drink beer daily, and about once a month he drank to excess—going on a spree with companions of the same kidney. His health was good during the summer and autumn. Had no cough or any pulmonary symptoms prior to the day on which he consulted me. On that day, while walking rapidly, he swallowed a little tobacco juice, and immediately raised a single mouthful of blood. This circumstance led him to call upon me. Respiration was not laboured or accelerated. Pulse normal. Aspect healthy. Considerable *embonpoint.*

*Physical Signs.*—The chest on both sides apparently flattened; the antero-posterior diameter notably small contrasted with the width. The left side at the summit, compared with the right, depressed; the clavicle more projecting. Superior costal movement on forced breathing greater on the right than on the left side.

Dulness on percussion marked in front, at summit, and above the spinous ridge over the scapula on the left side. Clear and equal resonance on the two sides below the scapula. Respiratory sound at the summit in front on the left side less intense than on the right side; the inspiration less vesicular, and higher in pitch, shorter and followed by a short, acute expiratory sound (broncho-vesicular respiration). Over the left scapula the respiratory murmur more feeble and less vesicular than on the right side. Vocal resonance more marked on the right side in front and behind. The whispering souffle more acute in front on the left side.

*Remarks.*—These physical signs, taken in connection with the history, are attributable to a tuberculous deposit which took place during the summer of 1855. An arrest of the tuberculous disease followed giving up the occupation of a printer, living on a farm and much of the time in the open air, together with the use of tonic medicines. Excepting the raising of a single mouthful of blood during an act of retching, the recovery appeared to be complete.

Case XIV.—*Pulmonary Tuberculosis; Excavations; Fistula in Ano; Non-progress of the Disease.*—H. F. L., aged 35, accountant, was examined, August, 1855. Both parents died of consumption. Of eleven brothers and sisters, all but four have died with the same disease.

When eleven years old he had some chronic affection of the knee, which was called "white swelling," and was laid up for a year. After this, prior to 15 years before the date of the examination, he had good health. At that time he had hæmoptysis at night after returning to bed. No cough followed, and he kept about his business as usual.

Ten years previous to the date of the examination, after great fatigue and anxiety incident to the illness and death of a child, he was attacked with a fever, and was ill two months. He had no symptoms of pulmonary disease at that time, nor between this event and the hæmoptysis five years before. During convalescence from this fever he contracted a cold, as he stated, and had inflammation of the lungs. After recovering from the latter he went to the south and remained eleven months.

Four years prior to the date of the examination he had hæmoptysis several times, unattended by cough or reduction in weight, and he kept about his business as usual.

During the autumn and winter of 1855, he had cough which progressively increased. The cough was at first dry, but expectoration after a time occurred and became considerable in amount. He had frequently lancinating pains shooting under the right scapula. Feels want of breath on exercise, especially on mounting stairs. He lost in weight in the autumn and early part of winter, but afterward gained, and at the time of the examination was heavier than four years before.

*A fistula in ano* had existed for five years, discharging daily more or less and occasionally fecal matter.

Respirations 24, not laboured. Pulse 72.

Accustomed to take from 4 to 6 glasses of brandy daily for the past six years.

*Physical Signs.*—Dulness on right side at summit in front and behind. Respiratory sound broncho-cavernous on that side.[1]

*August* 25, 1855. This patient during the summer had good health; was engaged actively in business, and took no remedies. He had gained in weight, and his aspect was quite healthy. The fistula was his chief source of trouble.

*Nov.* 14th, 1856. Patient reported as well as on the date of the last record.

*Remarks.*—It is difficult to fix the commencement of the tuberculous disease in this case. The history shows its existence most unequivocally in the autumn and winter of 1855. That a deposit had taken place years before is probable. The disease advanced to the formation of excavations, and ceased to be progressive at that stage.

There was in reality no management in this case. The patient took a few doses of cod-liver oil, and then discontinued this remedy. He continued steadily in business, and was much of the time out of doors. He indulged moderately in drinking and lived freely.[2]

CASE XV.—*Pulmonary Tuberculosis remaining Non-progressive for many Years; Coexistence of Heart Disease, the latter proving fatal.*—C. A., aged about 40, tobacconist, was examined by me in consultation with my friend and colleague, Prof. White, Dec., 1848. Mr. A. had been in infirm health for several years, but had kept steadily engaged in business. He had for some years suffered from palpitations and dyspnœa on exercise. Had lost of late, in weight, 20 lbs. He had had slight cough and expectoration for ten years.

*Physical Signs.*—Marked depression at summit of the left side of the chest. Dulness at that summit in front and behind, and the respiratory sound broncho-vesicular. Sounds of heart pure but feeble. A diffused, feeble impulse in the præcordia.

The diagnosis at that examination was, pulmonary tuberculosis, progressing slowly; enlargement of the heart by dilatation, without the evidence of valvular lesions.

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[1] The characters of respiratory sound are described in the record with minute details, which are omitted here.

[2] Since this was written, I have met this patient and find that during the present summer his health has deteriorated. The pulmonary symptoms denote now progressive tuberculous disease, and he has tuberculous laryngitis.

This patient was under my care for a short time in Feb. 1853. He had then considerable œdema of the lower extremities, with ascites, and he suffered much from palpitation and dyspnœa. The area of dulness on percussion in the præcordia was increased; the impulse feeble and diffused, and the action of the organ very irregular; but no bellows murmur discoverable. The heart affection was the most prominent. He had never been entirely free from cough and expectoration, which still continued about as for many years past. Since the former examination, he had kept steadily occupied in his business, and during the preceding five years had accumulated a comfortable property.

He died in 1855, evidently of the affection of the heart.

*Remarks.*—In this case the existence of a tuberculous deposit was determined seven years before death, and undoubtedly had already existed many years. The coexistence of disease of heart is an interesting feature of the case. This disease steadily increased, while the tuberculous affection, as judged by the symptoms, remained nearly or quite stationary. The management had reference mainly to the cardiac trouble. The patient was a man of great energy of character, and persisted in keeping about and attending to his business nearly to the close of life. According to the views of Rokitansky, disease of heart antagonizes a tendency to tuberculous deposit, and it may be supposed that in this instance the tuberculous disease was retarded or rendered stationary by the cardiac affection. Certainly diseases of the heart and pulmonary tuberculosis are rarely found associated.

CASE XVI.—*Deposit of Tubercles; Expectoration of Calculi; Complete and Permanent Recovery.*—S., farmer, from Illinois, aged about 40, consulted me, June, 1843. For some months prior to January of that year, he had a slight hacking cough. During the month of January he had, as he thought, some acute pulmonary affection, the symptoms of which are not noted. Subsequently he began to expectorate calcareous concretions, and had continued to do so, after successive intervals of a few weeks. He brought with him about twenty of these calculi, of about the size of small peas, round and solid. They were truly calculi, not concretions from the pharyngeal follicles which I have known to be mistaken for pulmonary calculi. Those showed me were but a small portion of the whole number which he had expectorated. He had supplied different physicians with specimens, and not taken pains to procure all that had been expectorated.

Before discharging these calculi, the cough was violent; and after their discharge, the expectoration was tinged with blood. In the intervals, his cough was slight with very small expectoration.

During the month of January and before, he lost in weight and strength.

After that month he had improved in these respects, and when I saw him in June, he presented a healthy aspect.

On examination of the chest, no physical signs of disease were discovered. At that time, however, my experience in exploring the chest had been small, compared with that of a more recent date.

In July, 1856, this person called upon me to report the condition of his health. He had for many years enjoyed perfect health. After consulting me thirteen years before, he continued for some time to expectorate calculi occasionally, until, at length, all pulmonary symptoms ceased. Shortly after consulting me he had given up severe labour on a farm, purchased land in

Iowa, and had become quite wealthy. It appeared from his statement that I had encouraged him with a favourable prognosis, and he called to tell me that my prediction had been verified.

*Remarks.*—Regarding the calculi expectorated as produced by the cretefaction of tubercles, this case is an instance of arrest of tuberculosis and recovery, the latter being complete and permanent. There was no medicinal management in this case. The patient, prior to the development of pulmonary disease, had worked very hard on his farm. He left home for several weeks, and afterward relinquished severe labour, but engaged in business which required exercise in the open air, buying and selling new lands.

Case XVII.—*Abundant Tuberculous Deposit; Formation of Large Cavity; Arrest of the Disease, and Recovery nearly complete.*—Mrs. V., German, aged 27, was admitted into hospital, Oct. 19th, 1848. She had been ill twenty weeks. Stated that she took cold during her menstrual period and was at once obliged to take to the bed. Prior to this she had good health. During the attack just mentioned, she had considerable pain in the right side and embarrassment of breathing. Some days after the attack she began to cough and had free expectoration. She was confined to the bed for six weeks, and afterwards had kept the bed a portion of the day, attempting to work the remainder of the time.

At the time of her admission she had copious puruloid expectoration, the sputa sometimes partially sanguinolent; respirations 44 per minute; pulse 104. There was moderate dulness at the summit of the right side of the chest; less superior costal movement on this side; respiration bronchial.

The expectoration continued for some time abundant and occasionally tinged with blood. After the lapse of a month, however, the quantity was greatly diminished, and the condition of the patient in all respects was much improved. In a little less than two months she thought herself sufficiently well to resume her household duties, and left the hospital. The treatment consisted of palliatives for the cough; an occasional laxative; the sulphate of quinia and iron, and full diet.

The patient re-entered the hospital March 9th, 1849. The general aspect was about the same as when she left the hospital 2½ months before. Cough and expectoration continued. Pulse 100. Appetite good. The chest on the right side at the summit was dull on percussion, and the respiration bronchial. The day following, hæmoptysis occurred and was pretty profuse.

May 14th, it is noted that the expectoration continued to be copious; sometimes bloody and generally fetid; the countenance not presenting marked emaciation. The cheeks constantly red. The extremities of the fingers presenting bulbous enlargement quite marked with incurvation of the nails. Pulse 100. Profuse perspiration at night. Marked dulness on percussion over upper part of right side of the chest. Well marked cavernous respiration over a space about two inches in diameter. Slight depression over this space, and pectoriloquy.

*May* 31. Copious hæmoptysis occurred.

*July* 13. It is noted that the patient had daily improved in aspect and strength; the cough and expectoration greatly diminished; she was able to be up and about, and expected soon to be able to leave the hospital.

The treatment, as before, consisted of quinia and iron, palliatives and generous diet.

*Sept.* 1851. Under this date I find the following note. This patient shortly afterwards left the hospital. A year afterwards I examined the chest cursorily and found the signs of an excavation still present, but less marked. She had still some cough, but presented a healthy appearance, and considered herself quite well; and she had during the year given birth to a living child.

A year or more after the date of the foregoing note I learned that this woman had died; under what circumstances I could not learn.

*Remarks.*—In this case there existed an abundant deposit of tubercle, and the disease advanced to the formation of an excavation of large size. Nevertheless, an arrest of the progress of the disease took place, and considerable advance was made towards recovery. The patient was nearly free from pulmonary symptoms; regained her flesh and strength; was able to discharge laborious household duties; became pregnant and was delivered of a healthy child. Whether she subsequently died from a return of the tuberculous disease or some other affection, I could not learn.

The management in this case consisted in the employment of tonic remedies, chiefly quinia and iron; generous diet; exercise in household duties as soon as her strength permitted.

Case XVIII.—*Pulmonary Tuberculosis; the Disease Stationary or Progressing imperceptibly without Management; the Patient, a day labourer, continuing at work.*—B. D., labourer, aged about 30, was admitted into hospital Dec. 6, 1856. He presented the following physical signs. Slight lateral curvature of the spine, causing some depression of the right shoulder. The left side at the summit is depressed; the clavicle more projecting than on the right side. Superior costal movement notably greater on the right than on the left side. Elevation of right scapula on forced breathing greater than of the left. Percussion resonance at the summit on the left side in front notably tympanitic; non-tympanitic at the base. Marked dulness over the left scapula. Resonance in axillary region and behind below the scapula equal on the two sides. At the left summit, in front, no respiratory murmur appreciable except at the acromial extremity, where it was broncho-vesicular, the expiratory sound prolonged, more intense than the sound of inspiration and higher in pitch. Over the left scapula respiration well evolved below the ridge and broncho-vesicular. On the right side, at the summit, respiratory murmur well evolved and vesicular. Vocal resonance in front notably greater on the right side; almost null on the left side. No whispering souffle on left side in front, but well marked on the right side. Over the scapula the vocal resonance about equal, but the voice bronchophonic, *i. e.* near the ear, on the left side. Sense of resistance on pressure greater on the left side at the summit. Below the scapulæ the respiratory murmur well evolved and equal on the two sides, or nearly so. Sounds and impulse of heart normal.

The patient stated that he had had cough for about two years. He began to cough in Jan., 1855, and the cough persisted till the following May. He had frequent lancinating pains at the summit of the left side. He had considerable expectoration, and several times raised blood. At no time had he been confined to the bed. Kept at work all that time, but frequently lost days. Was not aware of losing in weight.

From May, 1855, to February, 1856, was free from cough. Had good health, and worked steadily. Cough began to be again troublesome in July, 1856. In March and April he was occasionally obliged to keep in bed. Continued to labour during the following summer, but was often obliged to quit for a few days. Kept at work till the week before he entered the hospital.

Had never had any medical attendance. Got a blister and applied it to the chest in the spring of 1855, and in May, 1856, got bled. Drinks whiskey, but not to excess.

His aspect was not morbid. He was not emaciated. He stated that he was abundantly strong for work except that his health was somewhat deficient, and he was liable to pain at the summit of the left side of the chest. The prolabia were of good colour, and the cheeks ruddy. Respiration 20, and pulse 84. Had some cough and expectoration chiefly in the morning.

He remained in hospital about a week, and during this time took cod-liver oil and had full diet. The cough and expectoration were relieved, and he left feeling able to return to work.

*Remarks.*—This case illustrates either the non-progression or extremely slow progress of tuberculous disease in an Irish day labourer, without management, the patient (excepting now and then, for a day or two at a time) keeping steadily at work, living like other labourers of his class, exposed to the same hardships, and drinking in moderation.

Case XIX.—*Small Deposit of Tubercle; Arrest of the Disease.*—Dr. C. A. B., aged about 28, in the spring of 1855, had profuse hæmoptysis. Prior to this event, for some time his general health had not been good, and he had had a dry cough. His weight had diminished, and his aspect was morbid. He sailed for Liverpool, and after his arrival in England, at London, he had another hæmoptysis, also rather profuse, continuing for several days. He remained in England two or three months, running about, not pursuing any medical treatment, living freely, and returned in an emigrant vessel, having a protracted voyage. He had recruited very much before sailing for America, so that he performed the duties of surgeon to the ship. He continued to improve on the voyage, and was quite well on his return. Very slight cough and respiration, however, continued.

During the winter of 1855–6, and the summer of 1856, he continued well, doing very little in the way either of practice or study, and living rather freely. During the winter of 1856–7, he was engaged in teaching anatomy, and was most of his time in the dissecting-room. His general health evidently failed in some measure; he lost in weight, and his aspect was pallid. In April, 1857, he had an attack of pneumonia, affecting the lower lobe of the left lung. He recovered from this attack rather slowly; but after recovering from it, his general health improved; he gained in weight, his aspect became healthy. He had still a little cough and expectoration. No want of breath on exercise. Pulse not accelerated. Appetite and digestion excellent.

On examining the chest, July 23, 1857, the following signs were noted: Well marked dulness at the left summit in front and behind. No spinal curvature. Slight depression in front at the left summit. The respiratory murmur at the left summit, compared with the right side, deficient, but no disparity in pitch or quality apparent. Over the left scapula below the spinous ridge, a well marked, prolonged, acute sound of expiration. Above the ridge a *click* heard occasionally in inspiration. Vocal resonance everywhere greater on the right side.

*Remarks.*—There can hardly be a doubt that there has been a tuberculous deposit near the apex of the left lung. The physical signs, in connection with the history, warrant not only this conclusion, but that the deposit is not recent. It occurred, probably, in 1855, and, in the mean time, the disease has undergone arrest. Inasmuch, however, as there still remains slight cough and expectoration, the recovery cannot be said to be complete.

This case cannot be said to have had any medicinal management. The arrest followed the voyages across the Atlantic, and a sojourn of two or three months in England, with free living.

Case XX.—*Small Tuberculous Deposit; Arrest and permanent Recovery.*—Dr. W., aged about 35, in 1844 suffered for several consecutive months from cough, with moderate expectoration. Hæmoptysis occurred during this period once. He gradually recovered without medicinal treatment, and with the exception of a cough which lasted for two months in 1849, he has enjoyed good health, being entirely free from any symptoms of pulmonary disease.

On examination of the chest, in 1852, there was distinct dulness on percussion at the summit of the chest on the left side, and the respiration in this situation broncho-vesicular; the inspiration less vesicular, and higher in pitch than on the right side. Vocal resonance about equal on the two sides.

*Remarks.*—The retrospective diagnosis in this case seems remarkable in view of the history and physical signs. The recovery is complete and permanent, thirteen years having elapsed since the deposit of tubercle occurred. There was no medicinal management in this case; the arrest taking place as a result of self-limitation. He continued without intermission the practice of medicine, and in addition resorted to horseback exercise daily, in which he persevered for several successive months.

This case is given in my essay on variations of pitch in percussion and respiratory sounds, published in 1852.

Case XXI.—*Pulmonary Tuberculosis; Arrest of the Disease.*—D. B., ostler, aged 26, admitted into hospital, Sept., 1851. He stated that he had had good health up to a few weeks before his admission. Thought he had taken cold. Was attacked with cough, which at first was slight, but increased, and was soon accompanied by expectoration. The latter has progressively increased in quantity. Had lost about fifteen pounds in weight. The pulse was 100; respirations, 20. Expectorates from two to four ounces in the course of twenty-four hours. Perspires at night. Appetite tolerable.

On examination of the chest, the superior costal movement on the right side was found to be less than on the left; the summit on the right side was relatively dull on percussion, especially over the scapula; the respiratory sound in that situation broncho-vesicular, and a sibilant rale observed, limited to the summit on the right side.

The patient was placed on full diet, and cod-liver oil was prescribed in dose of half an ounce three times daily.

*Nov.* 6, 1851. The patient reported well, feeling abundantly able to leave the hospital and resume his occupation. The cough and expectoration had ceased. He had gained in weight. Slight depression existed at the summit of the right side of the chest. Dulness on percussion remained and diminished mobility. Dry crackling was observed, on auscultation, on the infraclavicular regions on this side.

The management consisted of nutritious diet and cod-liver oil.

*Remarks.*—An arrest of the disease in this case took place, but as nothing was known of the patient after his leaving the hospital, it cannot be stated that the recovery was permanent.

Case XXII.—*Pulmonary Tuberculosis preceded and accompanied by Dyspeptic Ailments, the latter persisting after Arrest of the Tuberculous Disease.*—Rev. Mr. C., aged about 35, consulted me, December, 1851. He had been in the ministry 14 years. During this period and longer he had been a dyspeptic. Had always been a student with sedentary habits, taking very little exercise, and not fond of out-door sports. He complained of a constant sense of debility and of becoming very easily fatigued by any exercise. Had suffered from chronic pharyngitis, which still continued. He was thin, but not greatly emaciated. Had had more or less cough for years with small expectoration. The latter symptoms had lately become more prominent. A few days previous, slight hæmoptysis had occurred. It had occurred once previously, several years before. Pulse was 60 per minute; respiration 25. Was easily put out of breath on exercise.

On examining the chest there were found dulness on percussion at the summit on the right side without depression; crackling in inspiration and expiration on both sides, but more marked on the right side in front and behind; diminished mobility at the right summit, and the vocal resonance apparently increased, the disparity between the two sides being more marked than usual.

The patient was advised to take the cod-liver oil; to take a little brandy daily; to relinquish his sedentary habits, exercising in the open air and living generously.

July 2d, 1855, I made a brief note of a second examination of the chest. The upper part of the right side was somewhat depressed. Dulness on percussion continued. Respiratory murmur on the left side in front well evolved and vesicular; on the right side less vesicular and extremely feeble—the contrast in intensity striking. Behind, no respiratory sound appreciable over either scapula save a prolonged sound of expiration over the right.

During the period (4½ years) that had elapsed the patient had changed his habits materially as regards exercise in the open air. He had rode and walked, and at one time was accustomed to saw wood daily for exercise. He had passed a winter at the south, but returned with the conviction that he enjoyed better health in a northern climate. At one time he adopted a milk and farinaceous diet, and thought that this was favourable to his health.

Two years have elapsed since the date of the last record, and in reply to a letter of inquiry addressed to him since I commenced writing this paper, he states that he has now no fixed cough; that he had a slight hemorrhage a year ago, but has had none since; that his general health is about the same, being troubled still with indigestion and debility. To quote his language, he says: "I often feel as if I were a poor miserable wreck of a man, and generally *endure* life rather than enjoy it." Nevertheless, in the same letter he states that he has preached regularly for the last ten months, going five miles on the cars on Saturday evening and returning on Monday morning, without having charge of the congregation during the week. As regards management for the last two years, he writes as follows: "Since I saw you I have *used up* hydropathy, homœopathy, and shall I add, allopathy? That would cut me off from the benefit of any suggestions which you may make in reply to this. I will not say it then, but only say that since returning from the water cure a year ago last spring, I have been under the care of Dr. ——; have taken some aloes, some iron, an occasional blue pill, lager beer to some extent, etc., but all does not avail to remove the old malady and give me strength. My experiment of 4½ months at a water cure was more than a failure. If I had remained there I believe I would have died. I left greatly prostrated."

It is evident that in this case an arrest of the tuberculous affection has taken place, a fact the full force of which the patient cannot appreciate, especially so long as he finds his comfort and desire for useful activity compromised by his dyspeptic ailments.

Case XXIII.—*Pulmonary Tuberculosis, Arrest, Recovery, Return of the Disease after Eighteen Years, ending fatally, and Autopsical Appearances.* —E. H., aged about forty, had an abscess in the perineum which ended in a fistula in July, 1845. The gut was divided, and he was nearly but not quite cured, a little discharge continuing. He was then, with this exception, apparently in good health. In April, 1846, he was attacked with hæmoptysis which continued to recur for several days, and for which he was bled repeatedly and freely. The symptoms and physical signs of tuberculosis were now distinctly declared. In addition to repeated venesections, he was treated with digitalis and mercurials. The case ended fatally in the June following.

On examination of the chest, *post mortem*, the right lung was filled with minute deposits of tubercle, and portions presented tubercular infiltration, a few small puruloid collections existing near the apex. Disseminated through the left lung were great numbers of miliary tubercles. These appearances were manifestly due to a recent tuberculous affection. In addition to these appearances, at the upper portions of each lung was a solid mass, of an oval form, nearly as large as a hen's egg, somewhat larger on the right than on the left side. Over these masses the pressure of the lung presented a marked depression and a contracted, puckered appearance. On dividing these masses they appeared to consist of condensed parenchyma; the colour was reddish; they were rather friable, and contained an abundance of minute calcareous particles. They were surrounded by a thick firm cyst, isolating them from the surrounding pulmonary structure.

The following facts relating to the previous history of the patient have an important bearing on the explanation of the appearances first described. The patient was engaged in the manufacture of burr mill-stones, and had many years before worked at this business. While thus employed he became affected with cough and other symptoms which were thought, at the time, to denote pulmonary consumption. In consequence of these symptoms he ceased to labour personally in the business, although he continued to carry it on, and he devoted himself to the out-door duties connected with it. This was 18 years prior to his last illness. He speedily recovered his health, and for the period just named was free from pulmonary symptoms, and enjoyed excellent health.

*Remarks.*—In view of the morbid appearances after death, and the *ante-mortem* history, it is assumed that in this case there had been tuberculosis of the lungs eighteen years before death, from which the patient had recovered, having good health until the return of the disease which proved fatal.

The arrest of the disease followed a change from confinement within doors and the inhalation of stone dust for active out-door occupation.

CASE XXIV.—*Small Deposit of Tubercle; Arrest of the Disease and Recovery.*—Mrs. R., aged about 22, during the summer of 1853 suffered from cough and expectoration, and pains in the chest. She lost in weight; her strength was considerably reduced, and she raised repeatedly bloody sputa. I failed to make a record of this case, and the facts of the history are stated from recollection. An examination of the chest revealed the physical signs of a small tuberculous deposit, but I am unable now to describe the signs.

She passed the winter at the South, and on her journey thither she was attacked with hæmoptysis, raising from one to two ounces of blood. She took quinia and iron, and also for a short time cod-liver oil. The latter remedy was discontinued on account of the patient's antipathy to it. Her health improved during the winter, and on returning in the spring she was free from the symptoms of pulmonary disease. She became pregnant during the following summer, and bore a healthy child, which is still living and well. The winter of 1855–6 she passed at the South, and the next winter in this city. Her health remained good; she has regained a rosy complexion, and at this moment is perfectly well.[1]

*Remarks.*—This is the only case in the collection in which the report is not made from notes contained in my clinical records. Of the correctness of the diagnosis I do not entertain any doubt. The management consisted in change of climate, exercise out of doors, tonics, and the use for a short time of cod-liver oil.

The foregoing series embraces the cases that have come under my observation, in which, judging from the history, symptoms, and physical signs, the existence of pulmonary tuberculosis was unequivocal, and the arrest of the disease equally clear. The collection might be enlarged by adopting a somewhat wider latitude in the admission of cases, including those in which a temporary arrest took place, and those that have occurred too recently, or remained under observation for a period too brief to determine as to the reality of the apparent arrest. A still wider latitude would admit cases in which the progress of the disease was remarkably slow. A comparison of the latter cases, as regards the points of agreement in the management, would certainly be a legitimate means of developing results in corroboration of the conclusions drawn from the analysis of cases of recovery from tuberculosis. My records for the last few years would supply a pretty large number of cases falling under these heads. In fact, I am sure that in a great proportion of the cases of pulmonary tuberculosis which I have of late observed, the progress of the affection has been retarded, taking as a standard of comparison the usual course of the disease some years ago. The clinical observer for twenty years need not be told that during this period there has been an entire revolution in the management of the disease. As regards my own views and practice, I am ready to admit that a better knowledge and appreciation of certain points of management have led me to expect at least a marked improvement in the symptoms of pulmonary tuberculosis, with much more confidence, in the majority of instances, than I ventured to entertain until quite lately. To these points I shall incidentally refer in the course of the few remarks which are to follow.

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[1] A slight perineal fistula has occurred in this case, and been somewhat troublesome at times for the past year.

The inquiry will naturally arise, what proportion do these instances of arrest of the disease bear to the whole number of cases observed during the years that these instances were noted. So large a proportion of the cases of which I have notes, are incomplete as regards the progress of the disease and the result, that I am unable to meet this inquiry. I wish it to be understood that the cases in this collection are not reported in order to furnish data for determining, statistically, the chances that the disease will be arrested; still less are they reported with a view to illustrate the success of any peculiar plan of management. The object, as already stated, aside from the interest which may belong to the cases individually, is to institute a comparison as regards those circumstances common to more or less of the cases, which, it may fairly be supposed, were concerned in bringing about an arrest of the disease.

It will be noticed that in the caption prefixed to the cases, severally, some are characterized by the terms "arrest and recovery," and others by simply the first of these terms. An arrest of the disease, it is clear, may take place without recovery; in other words, the tuberculous affection may cease to be progressive, the processes of restoration never being fully completed. The patient who had been attacked twenty-eight years, or the wife eighteen years before, for example, were not free from the symptoms of pulmonary disease, yet the history and present condition showed that the disease, as regards destructive changes, had for a long time remained stationary. The same is equally true of other cases in which the date of the tuberculous deposit was much less remote. A very marked degree of improvement in the local symptoms, conjoined with the recovery of the normal weight and strength, after the lapse of several months, suffices to show that the disease is arrested; and this conclusion is not disproved by the renewal of the evidences of the progress of the disease at a future epoch. Recovery from the disease can be pronounced only when, in connection with restoration of the general health, the local symptoms have entirely disappeared. This recovery may be complete, albeit the patient subsequently falls a victim to tuberculosis, as in Case No. XXIII., in which a fresh deposit of tubercle took place eighteen years after a former exudation. There may be a recovery which is not permanent, but not less a recovery on that account. To be permanent, the disease must not return, or, at all events, not for a considerable space of time. Of the cases in this collection, in thirteen an arrest of the disease was followed by complete recovery; in eleven, the facts show arrest without furnishing evidence that the processes of restoration were fully completed. To what extent, if at all, are those who have recovered from tuberculosis rendered thereby more liable to the disease thereafter, is an interesting question which cannot be answered without more data than are as yet available. In Case No. XXIII., as just stated, recurrence took place after a period of eighteen years. In two of the cases, thirteen years have already elapsed without any reproduction of the disease, the dates of the recovery in the other instances, extending for variable periods between six years and a few months.

In several of the cases the arrest of the disease was evidently due to an intrinsic tendency to that result. In other words, the disease ceased to be progressive, in consequence of its self-limitation. This is fairly to be inferred in those instances in which no appreciable external influences, in the form either of medication, diet, or regimen, were brought to bear on the course of the disease. Eight of the cases may be embraced in this category, viz., Nos. III., IV., V., XI., XII., XIV., XVIII., XX. In these cases the patients took no remedies of importance; and continued, unchanged, the same habits of living as before the development of the disease. Examining these cases, severally, there are no apparent circumstances common to them and distinguishing them from the others, to which this inherent tendency to arrest may be imputed. In conformity with the current pathological views, we have only to say that in these instances the *amount* of the tuberculous dyscrasia was limited, and was exhausted after a certain quantity of exudation had taken place.

The fact of the existence of an intrinsic tendency to arrest in a certain proportion of the cases of pulmonary tuberculosis, is highly important. It is a fact hitherto not sufficiently appreciated; indeed it is but lately that such a tendency, in any instance, has been recognized. Two questions suggest themselves in this connection. One is, in how large a proportion of the cases of pulmonary tuberculosis does this tendency exist? It will be long before data sufficient for determining a definite answer to this question will have been accumulated. The second question is, in a measure, involved in the first. It is this: in a certain proportion of the instances in which an arrest of the disease appears to be due to measures of management, is not the result rather attributable to an intrinsic tendency? This question it is of course difficult to answer definitively in individual cases. Both these questions, however, are equally applicable to other diseases than pulmonary tuberculosis, and, with our present knowledge, are alike unanswerable. The truth is, our acquaintance with the natural tendency of many diseases unaffected by extrinsic influences, is extremely limited, and, for obvious reasons, this knowledge is slowly acquired. The importance of this knowledge, as the true point of departure for the study of therapeutical agencies, is sufficiently apparent. If it be probable, as must be admitted, that the arrest of the tuberculous affection is due to its self-limitation in more or less of the cases in which measures of management are resorted to, is it not also probable that the intrinsic tendency to recovery is sometimes thwarted by injurious therapeutical or other means? We cannot but indulge more than a suspicion that this question demands an affirmative answer. Unpleasant as may be the reflection, it must not be blinked that the natural tendency of the disease to arrest, it is more than probable, was not unfrequently frustrated by the measures formerly employed in cases of tuberculosis, consisting of general and local depletion, mercurials, emetics, low diet, confinement within doors, &c.

Of the measures just referred to, in other words, all antiphlogistic and debilitating measures, none entered into the treatment of any of the cases in this collection.[1] We are not, therefore, called on to inquire as to the influence which any such measures may have exerted in contributing to the result. On the other hand, we may ask if the fact of their non-employment was not an important circumstance as regards the result? The answer to this question is anticipated in the closing sentence of the foregoing paragraph.

The occurrence of hæmoptysis in a large majority of the cases is a point worthy of note. It occurred in eighteen of the twenty-four cases. In ten of these eighteen cases, it occurred more than once, and in some it occurred several times.

This proportion exceeds that in which hemorrhage may be expected to occur in cases of tuberculosis, according to the researches of Louis (57 of 87 cases), a fact which goes to show that this symptom is not unfavourable as regards the possibility of arrest of the disease taking place. The fact accords with the conclusion deduced by Prof. Walshe from his researches, viz., that the occurrence of hemorrhage does not hasten the progress of the disease, but appears to produce an opposite effect. The fact also accords with the inference from observations in individual cases in which hemorrhage seems to take place in lieu of a fresh tuberculous exudation.

Comparing, now, the cases in which measures of management were employed (*i. e.*, 16 of the 24 cases, excluding the 8 cases in which no measures were employed), in nearly all a change was made in the habits of life. This change, with a single exception, consisted in all instances in relinquishing, partially or entirely, sedentary pursuits, and giving proportionately more time to exercise in the open air. The pursuits relinquished were as follows: Teaching school and weaving; printing in two instances; teaching school and attending medical lectures; study of the law; office duties of a lawyer; teaching anatomy; theological studies and writing sermons; medical studies and duties of telegraphist; making millstones; domestic seclusion. In the excepted case, the patient relinquished severe labour as a farmer, for several months of recreation and travel. In five cases, the change in habits constituted the sole measures of management. How much importance belongs to the change in these cases? in other words, in how far was the result due to the change, irrespective of the intrinsic tendency of the disease? Here, again, I must be content with raising a question without furnishing facts on which to base a definite answer. Inasmuch as improvement followed the change, and, moreover, in some instances occurred so speedily and in such a marked degree that the relation of cause and effect seemed to be striking, a certain amount of agency is fairly attributable to this change. It may be remarked here that in none of the instances in which arrest of the disease occurred without any measures of management, were the pursuits of the patients sedentary; in all the habits of life were more or less active, and generally quite so. We are warranted, then, in concluding that out-door occupation is conducive to the arrest of pulmonary tuberculosis.

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[1] The only exception to this statement is that in one of the cases the patient had been bled once before coming under observation.

The exercise in the open air was not generally of the kind which often goes by that title, consisting in simply airings by gentle walks or drives; but it consisted in rough occupation, often involving considerable, and sometimes great exposure to the vicissitudes of the weather. In three instances it consisted in the labour of medical practice, which in two of the instances was in the country, and in the remaining instance, in addition to visiting patients, horseback exercise was taken daily, and persevered in for several months. In two instances the patients (females) performed laborious housework. In one instance, the in-door avocations of the lawyer, which had been extremely arduous, were exchanged for several weeks of constant travel in midwinter, during which the pulmonary symptoms ceased. In one case the patient left sedentary pursuits which confined him constantly within doors, for hunting, fishing, rowing, etc., to which for several weeks he devoted himself entirely. A student at law gave up his profession, and, after recruiting by field sports, engaged in business and went to California. One patient continued to labour out of doors during the autumn and winter, as a ship carpenter. A professor of anatomy left the duties of the dissecting room and of medical practice, and, crossing the Atlantic, was on foot daily, running about London and its vicinity for several months, a hæmoptysis occurring during this time, to which he gave no heed. A day labourer continued to work, occasionally losing a day or two. A printer went to work on a farm, and afterwards engaged in the out-door business connected with the circulation of a daily newspaper. A clergyman took to riding and walking and sawing wood. These facts go to confirm the correctness of the conclusions which practitioners have frequently formed from their observations in individual cases, viz., that laborious, fatiguing exercise in the open air is best suited to promote the arrest of pulmonary tuberculosis. Such exercise is obtained, in some instances, by engaging in field sports in which the mind becomes interested, or in travelling; in other instances by a change of occupation by which sedentary pursuits are relinquished for those requiring active, out-door employment, and in other instances by a necessity which compels the patient to continue daily physical labour as long as possible, as a means of support. This necessity, painful as it may sometimes seem, may be far less a calamity than it appears.

Change of climate entered into the management of but few of the cases. In two instances only was there a change of climate prior to the evidence of an arrest having taken place. In one of these (No. XXIV.) the patient passed the winter season in the southern part of our country; in the other (No. XIX.) the patient crossed the Atlantic, and returned after sojourning in England a few months. In these two cases there is room for the inquiry, how far the climatic change contributed to the result—another inquiry which is easier raised than answered. In three other cases, the patient passed a winter at the South after the arrest had occurred (Nos. II., IX. and XXII.). In two of these cases the health improved during the southern residence; in the remaining case (No. XXII.) the patient thought the influence was unfavourable. During the period that these cases of arrested tuberculosis have been collected, not a few of my patients have resorted to change of climate, and hence, in the great majority of these instances, the disease has not been arrested. So far as my experience goes, then, it fails in furnishing even much presumptive evidence in favour of a beneficial influence from change of climate.. On this subject I have been led to conclusions to which others have also arrived, viz: that climate, in itself, exerts no special agency in determining an arrest of tuberculosis; but that it may favour this result indirectly by affording better opportunity for exercise in the open air, and furnishing objects of interest to the mind which will secure that object. By the remark just made, I do not, of course, mean to be understood as saying that tuberculosis is as likely to be developed, other things being equal, in one climate as in another. I refer to a remedial influence only. Entertaining the view just expressed, it has seemed to me far less important to fix upon a situation supposed to be the most favourable in its climatic aspects to the tuberculous patient, than to select a residence where the inducements to active habits of exercise are greatest. To place a patient in a group of invalids, in a particular spot where he is expected to derive some specific remedial influence from the atmosphere, is rarely useful. The *ennui* incident to such a position, for a man of active habits of mind and body is intolerable, and the moral effect of his associations is injurious. Patients will do wisely in avoiding the favourite places of resort for those affected with the disease, and in choosing points where the incitements to, and the resources for physical exertion abound. Generally, the objects of change of climate are better secured by frequent change of place than by remaining stationary. Travelling in foreign countries, even when, so far as climate is concerned, the change is for the worse rather than for the better, may be in a high degree useful, because the exercise which it invites is not endured as a task, but accepted as a means of mental gratification.

As regards diet, it is already implied in what has been stated with reference to antiphlogistic or debilitating measures, that it was not an object in the management of these cases to lower the powers of the system by reducing the alimentary supplies either in quantity or quality. On the other hand, it was a prime object in the instances in which treatment was directed, to sustain and develop these powers by a highly nutritious plan of dietetics. The patients were encouraged to live generously, indulging and cultivating an appetite for any and all the varied wholesome articles of food, with a full proportion of meat.[1]

This statement expresses, in a few words, the dietetic management of cases of pulmonary tuberculosis, which, as it seems to me, is alike consonant with the teachings of experience, sound pathology, and common sense.

It is a significant fact, apparent on referring to the cases which I have reported, that the appetite and digestion were, in general, not greatly impaired. Dyspeptic ailments appear to have been prominent in but one instance (No. XXII).[2] It accords with the views just expressed to regard an unimpaired appetite and digestion as highly favourable for an arrest of the disease. Observation undoubtedly shows us instances in which the tuberculosis is progressive notwithstanding the ingestion and apparent assimilation of nutritious food; but it probably can show few examples of arrest of the disease when, either from disinclination or injudicious management, the diet is insufficient for the full support of the body, or fails to be appropriated for that end. In the single instance in this collection of cases in which dyspeptic ailments were prominent, abundant food was taken and digested notwithstanding the act of digestion was accompanied by distressing symptoms.

No part of the management of pulmonary tuberculosis seems to me of greater importance than that relating to diet. In fact, whatever efficiency belongs to active habits of exercise, it is reasonable to suppose, is in a great measure exerted by means of the increased activity of the processes of assimilation thereby induced. Without the latter it is sufficiently clear that the powers of the system are lowered in proportion as the materials of the organism and the vital force are expended by the exercise of the voluntary organs. There is much scope for remark under this head, but my limits will not permit a more extended discussion of the subject.

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[1] Inasmuch as carbonaceous alimentary principles appear to be highly useful in the management of tuberculosis, I have been led to think that saccharine substances, when well borne, should constitute a good proportion of the diet. Acting on this view, I have been accustomed to advise the free use of sugar by tuberculous patients. If it be true that persons employed in sugar-houses are less prone than others to this disease, it is a more rational supposition, as it seems to me, that the benefit is derived from eating the sugar, than that which attributes it to inhaling an atmosphere loaded with saccharine matter. The latter hypothesis has been advocated by Dr. Cartwright of New Orleans.

[2] Dyspeptic ailments preceded the development of tuberculosis in Case No. IV., and continued to some extent afterward. The subsequent remark in reference to No. XXII. is equally applicable to that case.

Diffusible stimulants—wine, beer or spirits—entered, more or less, into the management of a considerable number of the cases. These were employed mainly as subsidiary to alimentation, or, in other words, as contributing to render the digestive processes more active and complete. They were given for this end in moderate quantities. Within a period too recent to include in this collection the cases of apparent arrest that have come under my observation, I have been led to take a larger view of the utility of alcoholic stimulants in the management of tuberculosis. I have, of late, advised their use much more freely than formerly, and I think I cannot be mistaken in attributing to them much value. I have observed that patients affected with tuberculosis are often able to take spirits in large quantity without experiencing stimulant or intoxicating effects. The disease appears to be one of those in which these effects are with difficulty produced. I am tempted here to cite an instance which came under my notice not long since. I visited, in consultation with a professional friend, a patient in an advanced stage of tuberculosis: he was scarcely able to sit up; expectorated puruloid matter in great abundance; had hectic paroxysms with profuse sweating, and was much emaciated. My friend, who had just taken charge of the case, attached great importance to the free use of stimulants in this disease, and I was not inclined to interpose any restrictions. In a few weeks I learned that the condition of the patient was greatly improved; the quantity of expectoration was much diminished; the hectic paroxysms were less marked, and he had gained sufficient strength to walk about the streets. He had taken daily three quarts of pretty substantial stock ale, with about half a pint of brandy! This was conjoined with a highly nutritious diet. In this case, although the patient had not been addicted to drinking, the very large quantity of stimulants taken daily produced no intoxicating effect. In my own practice I have not witnessed so striking an illustration as this; but I have repeatedly known stimulants taken in quantities which in health could hardly be borne without manifest excitement and no stimulating effects produced on the circulation and nervous system. The ordinary stimulant effects of fermented and spirituous liquors in health I have been led to regard as furnishing a criterion by which to limit their use in cases of tuberculosis. If these effects are produced the quantity is too large, and any quantity within this limitation will be likely to be useful.[1]

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[1] With respect to the kind of stimulant best suited to cases of tuberculosis, whether beer, wine, or spirit, I have nothing definite to offer as the result of my own observations. In some parts of our country it is supposed that the common whiskey of the country is much to be preferred. My rule has been to consult the taste and experience of the patient. Generally, I think, the choice will be between spirits and beer. Individual peculiarities must be taken into account. I had lately a patient who took great pains to procure an excellent article of the Bourbon whiskey, but when obtained the effect was inferior to the common corn whiskey, and he was obliged to return to the latter. The superior virtue supposed to belong to the common whiskey has been attributed to the larger quantity of fusel oil which it contains.

A consideration of great importance is involved in this subject, viz., the liability that the patient will acquire habits of intemperance, which would certainly render questionable the advantage of an arrest of the disease. Assuming that this liability is incurred, and, at the same time, that the free use of stimulants increases the chances of arrest of the disease, can there be a question as to the duty of the physician to give the patient the benefit of the remedy even at a certain amount of risk of his becoming intemperate? If this remote effect were not a contingency, but was shown to follow uniformly, or even in a large proportion of cases, the question would be different. It remains to be ascertained by a collection of facts how great is the liability to this result. I have not space, were this a proper occasion, to discuss the causation of intemperate habits; but I will remark, I cannot but entertain the hope, if not conviction, that drunkenness is rarely due to the use of stimulants strictly as a remedy, divested of social associations, especially when they are given under conditions of disease which antagonize the effects for which they are taken in health, and when the production of these effects is considered as contraindicating or limiting their use.

It remains to notice the measures more distinctly medicinal which were employed in the reported cases. I shall omit all reference to the various palliatives which must play an important part in the treatment of cases of tuberculosis as well as other diseases. These details were omitted in the condensed histories of the cases reported. The remarks under this head will occupy small space, for it is a striking feature, which the cases present in common, that very little medication was resorted to. In no instance were any remedies given with reference to a special influence on the tuberculous cachexy, unless the cod-liver oil be regarded as a remedy of that kind. Tonics frequently entered into the management. These were given with a view to their effect on the processes of digestion and assimilation, and their importance is to be measured by this effect. In so far as they tend to increase the activity of these processes, remarks on their value are already anticipated in what has been said under the head of dietetic management. I cannot doubt that in many cases they form an important part of the treatment.

The cod-liver oil does not hold a conspicuous place in the management of these cases. Several of the cases occurred before this remedy came into vogue. In other instances it was not taken, or taken for a short time only, in consequence either of a strong repugnance to it on the part of the patient, or its being found to disturb the digestive organs. In very few of the cases was its use persisted in for a long time. It was continued longest in one of the most interesting and striking cases in the collection (Case No. I.). The inference which the reader might naturally draw from the histories of these cases as regards the writer's opinion of the value of the cod-liver oil, would do injustice to this opinion. Had a larger number of these cases occurred within a more recent period, or were I to report the cases during the last few years in which the progress of the tuberculous affection appeared to be greatly retarded, although not arrested, this remedy would be found to enter more generally and often largely into the treatment. That it is a valuable remedy in the management of pulmonary tuberculosis I can scarcely entertain a doubt; but it is to be considered that since it has become emphatically *the* remedy employed in this disease, improved pathological views and the lessons of experience have wrought a radical change in the management as regards other measures—a change consisting in the abandonment, to a great extent, of antiphlogistic and debilitating measures, and a recognition, more and more, of the importance of measures of an opposite character. Consequently, assuming (what is undoubtedly true) that the disease is managed more successfully of late than a few years ago, it is not easy to determine how much of this greater success is to be attributed to the use of the cod-liver oil and how much to the change just referred to. Practically, this is an important problem, but data sufficient for its solution are not yet available. The facts which I have collected certainly show that arrest of the disease takes place when it is not due to this remedy.

A point pertaining to the mental constitution of persons affected with tuberculosis seems to me worthy of notice. As regards the successful management of the disease, much depends on the patient's energy and perseverance. Tuberculous patients, as is well known, usually entertain sanguine expectations of recovery; but in a large proportion of cases they expect recovery to take place without any extraordinary agency on their part to secure that result. The disease, while it engenders hopes which are so often fallacious, seems frequently to impair that determination of purpose without which the means requisite to effect an arrest will not be efficiently pursued. A passive expectancy of recovery and a calm acquiescence in the prospect of a fatal termination, belong to the natural history of the disease. On referring to the cases which I have reported, I find that, in general, the persons manifested greater resolution than is usually associated with the tuberculous cachexy. This was due in some instances to innate strength of character, and in other instances to the force of circumstances. A feeling of inability from his situation to give up to the disease may operate in behalf of the interests of the patient much more powerfully than the apparent advantage of leisure and wealth. I was impressed with the truth of this remark by a conversation since I began to write this paper, with a person whose case is included in the foregoing report. The person referred to is an esteemed medical friend who was affected with tuberculosis thirteen years ago (Case No. XX.). At that time young in the profession, and dependent upon it, it seemed to him out of the question to relinquish, even temporarily, its duties; and, fully sensible of his danger, he deliberately resolved to continue his labours as long as possible, and to die in harness should the disease prove fatal. He attended to all his calls, night and day, and, in addition, practised daily and systematically the curative measure pronounced infallible by the great Sydenham, viz., horseback exercise. A person of a character less resolute, or so situated as not to feel the same incentives to exertion, would perhaps have succumbed to the same amount of disease.

In conclusion, the general views which, with our present knowledge, are to govern the management of pulmonary tuberculosis may be summed up in a few words. The grand ends to be attained are, the removal of the cachexy on which the progress of the disease depends; the consequent arrest of the disease, and the promotion of the processes of restoration. There is no special medication to be pursued for the attainment of these ends; they are to be attained by measures which, in general terms, develop and strengthen the powers of the system. This mode of expression, it is true, in a scientific point of view must be considered rather vague; but in a practical sense it has a meaning sufficiently definite. The measures are hygienic rather than medicinal; but much importance often belongs to the latter. The hygienic measures which are most important are laborious exercise in the open air conjoined with agreeable mental occupation, and, as conducive thereto, frequently change of business, the selection of a more eligible climate, and travelling are desirable, if not necessary; generous diet, and in many if not most instances, the free use of alcoholic stimulants. The medicinal remedies, in addition to those which are simply palliative, are chiefly those of the tonic class, and in this category may be included the analeptic remedy which has of late years had so much celebrity—the *oleum jecoris aselli.*

*September*, 1857.

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## ART. III.—*The Vital Statistics of War, as shown by the Official Returns of the British Army During the War with Russia, and by those of the United States Army During the War with Mexico.*[1] By Assistant Surgeon RICHARD H. COOLIDGE, U. S. Army.

WITHIN the last ten years two memorable wars with their brilliant feats of arms, their instances of consummate generalship and of individual heroism, have attracted in a pre-eminent degree the attention of the civilized world. Is it not the province of the medical profession to examine the official records of those wars, to ascertain the amount of sickness and mortality with which they have been attended, and to devise, if possible, some means by which the terrible sacrifice of life consequent upon a state of war may be lessened?

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[1] Dispatches and Papers relative to the Campaign in Turkey, Asia Minor, and the Crimea, during the War with Russia in 1854–55–56, &c. &c. Compiled and arranged by Captain Sayer, Deputy Assistant Adjutant General, Horse Guards. London, 1857. (Statistics and returns prepared by authority.)

Statistical Report on the Sickness and Mortality in the Army of the United States. Compiled from the records of the Surgeon General's office, and published by authority of the Senate. Washington, 1856.

The war between France, England and Turkey on the one side, and Russia on the other, was distinguished by the greatness of the numerical force engaged, and the vast amount of material employed, as well as by the science, energy, and perseverance displayed on both sides; while that of the United States and Mexico, though carried on with a less imposing military array, was nevertheless characterized by events no less brilliant, and by feats of arms exhibiting no less of perseverance, and of military skill.

The records of military surgery attest that the advance made in military science, and the improvement and multiplications of the means of attack and of defence, have lessened rather than increased the loss of life arising from actual conflicts of arms. It is to be feared, however, that although the progress made in medicine and surgery may, and probably has, lessened the proportion of deaths to the number of sick and wounded, yet that the loss of life from diseases incident to large armies, has not, in the aggregate, been diminished. The application of known principles of hygiene to armies and navies, has, under ordinary circumstances, been attended with the happiest results. Thus, in the British navy, the deaths in "1779 were 1 in 8; in 1811, 1 in 32; and in 1836, 1 in 72." It is, probably, impossible to apply those principles, or to enforce prophylactic measures, as generally and as rigidly in large armies as in fleets, but surely the sanitary condition of troops in the field exhibited in these statistics, not only admits of, but imperatively demands correction.

It is believed that though the circumstances of the respective campaigns in which the armies of England and of the United States were engaged, widely differ, the statistics of both admit of comparison; and that the general results afford material for the serious consideration of all concerned in the formation, discipline, and economy of armies, as well as for those immediately connected with their hospital service.

It is evident that in a comparative analysis of statistics not based upon precise or uniform data, but relating to dissimilar numbers and covering unequal periods of time, much room is afforded for error, and for so stating the results as to make them conform to the opinion of the individual, or, in instances like the present, to render them subservient to national prejudice or pride.

The writer has no other object in view than that of presenting the general vital statistics of those wars as shown by the official returns; and of exhibiting in a clear and concise form the magnitude of those evils of war which, in his opinion, admit of palliation.

The material at command is not such as to admit of the consideration of the diseases of those armies, or of the special causes which led to them; but as the returns embrace the statistics of several kinds of troops engaged in dissimilar operations, the results will, it is believed, give a close approximation to the average loss of health and of life incident to a state of war; and will also show the ratio of such loss consequent upon actual conflicts with the enemy, to that from diseases following the ordinary exposure and hardships of an active campaign.

In order that these statistics may be understood, and receive their true value and nothing more, it is considered advisable to precede them by a summary statement of the principal events of the war with Russia, and of that with Mexico; to point out the leading circumstances affecting the two armies; and to note those things which serve to compensate for the different character of their campaigns, and for the disparity in their relative strength.

The principal events of the war with Russia as connected with the service of the British Army, may be summarily stated as follows: The embarkation of troops from England commenced on the 22d of February, 1854, and the first divisions of the British Army arrived "in the East" in April following. The Allied Armies landed in the Crimea, September 14, 1854, and on the 20th of that month fought the battle of the Alma. The first bombardment of Sebastopol commenced on the 17th October, 1854, from which time until the final assault and capture of that city, September 8, 1855—a period of ten months and twenty-two days—the allied armies were continually engaged in the siege of that place. In addition to the exposure and frequent conflicts with the enemy necessarily attendant upon siege operations, those armies fought five battles. The battle of Balaklava, October 25, 1854; the battle of Inkerman, November 5, 1854; the "first general assault" upon Sebastopol, June 18, 1855; the battle of the Tchernaya, August 16, 1855; and the final assault upon Sebastopol, September 8, 1855.

The declaration of peace was announced from the Foreign Office, London, March 31, 1856.

A portion of the "old," or regular army of the United States, which had been for some months encamped at Corpus Christi, Texas, advanced on the 8th of March, 1846, to the Rio Grande, opposite the Mexican town, Matamoras. On the 25th of April, a detachment from that army was attacked by a large Mexican force. The principal events of the war which immediately followed this act of hostility, may be thus enumerated: The battles of Palo Alto, and of Resaca de la Palma, May 8th and 9th, 1846; siege of Fort Brown, May 4th to 9th, 1846; battle of Monterey, September 21st, 22d, and 23d, 1846; battle of Buena Vista, February 22d and 23d, 1847; siege of Vera Cruz, March 9th to 28th, 1847; battle of Cerro Gordo, April 18th and 19th, 1847; battles of Contreras and Churubusco, August 19th and 20th, 1847; battle of Molino del Rey, September 8th, 1847; battles of Chapultepec and City of Mexico, September 12th, 13th, and 14th, 1847.

The President's proclamation declaring the termination of the war, was announced in orders from the War Department July 6th, 1848.

It appears from the preceding statement of facts, that the actual duration of the two wars was nearly the same; and that in both, a period of about eighteen months elapsed between the first movement of troops towards their respective theatres of war, and the crowning events of those contests, the taking of Sebastopol, and the capture of the City of Mexico.

At the commencement of hostilities, the United States Army present at the seat of war numbered about 3000, being about one-fifth of the total regular (old) force employed during the war.

At the landing in the Crimea, the number of British troops amounted to 26,800, being a little more than one-fourth of the aggregate strength of that regular army during the war.

It is *probable* that with both armies the relative proportion between the *average* numbers actually on duty at the seat of war, to the *aggregate* force employed in each during the whole period of the war, was maintained with some degree of uniformity; but the data to determine this point are wanting. In the tables which are herewith presented, the official figures are strictly adhered to, the losses per cent. being calculated therefrom. As, however, the results of such calculations do not truly represent the relative loss per cent. to the *actual average number* of officers and men in the field, it has been assumed in the last table of the series, that the average force constantly in the field throughout the war, or for the whole period of service, was *one-half* of the aggregate force mustered into service, or employed in the war. As respects the British Army, the writer has no positive means for judging whether this assumption is a fair one, whether it does or does not approximate the true average; but with regard to the regular (old) army of the United States, and to the volunteer force, he believes that it does represent very nearly the true average. The "additional force," known as the "ten new regiments," called into service during the war with Mexico, had probably an average of *two-thirds* of their aggregate numbers actually in the field.

The official returns of the condition of the British troops, from which these statistics have been compiled, cover a period of twenty-five months and six days, commencing February 22d, 1854, and ending April 1st, 1856. As, however, only "the Guards" and three regiments of infantry had embarked from England prior to the 1st of March, the six days in February have been neglected in calculating the ratios of losses sustained, and the term of service has been stated at twenty-five months.

The official statistical tables respecting the "old" or regular army of the United States, which have been used in this paper, cover a period of twenty-six months, from May 1st, 1846, to July 1st, 1848. The statistics of the "additional force," or the "ten new regiments," and of the "volunteer force," are given separately, both for the reason that their terms of service were much less than that of the regular army, and because it is desirable on many accounts to compare the results of different organizations. It is to be particularly observed, that the sole object of this paper being to show the effects of war upon the *health* and *lives* of those engaged therein, the losses set down in the official returns of the British Army under the headings "Prisoners of War," and "Desertions," and in those of the United States Army under "Resignations," "Desertions," and "Discharges by Expiration of Service," are not included in the statistical tables which follow.

Under the "Invalided Home" of the British returns, and the "Discharges for Disability and by Order," of the United States returns, are included all those who from disease or wounds were rendered *non-effective.* The persons thus discharged from the United States Army, were sent to their homes at the public cost, and most of them were pensioned. It is known that the mortality in this class was very great, but there are no data by which to ascertain its actual amount.

The sufferings of the British Army from the severity of the winter in the Crimea, and from cholera, find their counterpart in the exposure of the United States Army to the intense heat and fevers of the Rio Grande and of Vera Cruz, and in the general prevalence of "Mexican Diarrhœa" which proved its severest and most fatal scourge.

With these preliminary and explanatory remarks the tables are submitted.

No. I.—*Table showing the Aggregate Strength of each Army in Officers and Men; the Deaths; and the Numbers rendered Non-effective from all causes.*

| Forces. | Total strength; officers and men, including reinforcements. | Deaths from all causes at the seat of war. | Invalided home (British Army). Discharges for disability and by order (U. S. Army). | Total loss. |
|---|---|---|---|---|
| British Army. | | | | |
| Regulars . . . . | 97,864 | | | |
| Land Transport Corps . | 7,575 | | | |
| British German Legion . | 3,753 | | | |
| British Swiss Legion . | 2,121 | | | |
| Total . . | 111,313 | 21,097 | 16,308 | 37,405 |
| United States Army. | | | | |
| Regulars . . . . | 15,736 | | | |
| Additional Force . . | 11,186 | | | |
| Volunteers . . . . | 73,260 | | | |
| Volunteer General Staff . | 272 | | | |
| Total . . | 100,454 | 12,896 | 12,252 | 25,148 |

In the other tables of this series the statistics of the regular troops of the British Army will alone be given, as the Land Transit Corps did not arrive at the seat of war till the spring of 1855; and the German and Swiss Legions not until the fall of 1855.

No. II.—*Table showing the Loss sustained in consequence of Engagements with the Enemy.*

| FORCES. | Total strength officers and men. | Total period of service. | KILLED IN BATTLE. | | | DIED OF WOUNDS. | | | TOTAL KILLED AND DIED OF WOUNDS. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Officers. | Men. | Total. | Officers. | Men. | Total. | Officers. | Men. | Total. |
| BRITISH ARMY. | | *Mos.* | | | | | | | | | |
| Regulars . . . | 97,864 | 25 | 157 | 2598 | 2755 | 86 | 1933 | 2019 | 243 | 4531 | 4774 |
| UNITED STATES ARMY. | | | | | | | | | | | |
| Regulars . . . | 15,736 | 26 | 41 | 422 | 463 | 22 | 307 | 329 | 63 | 729 | 792 |
| Additional Force . | 11,186 | 15 | 5 | 62 | 67 | 5 | 71 | 76 | 10 | 133 | 143 |
| Volunteers . . | 73,260 | 10[1] | 46 | 467 | 513 | 0 | 100 | 100 | 46 | 567 | 613 |

| FORCES. | LOSS PER CENT. | | WOUNDED IN BATTLE. | | | Proportion of deaths to the number wounded. | Total killed and wounded. | Proportion of killed and wounded to the total strength, officers and men. |
|---|---|---|---|---|---|---|---|---|
| | Whole service. | Monthly average. | Officers. | Men. | Total. | | | |
| BRITISH ARMY. | | | | | | | | |
| Regulars . . . | 4.87 | 0.19+ | 515 | 11,361 | 11,876 | 1 in 5 88 | 14,631 | 1 in 6.68 |
| UNITED STATES ARMY. | | | | | | | | |
| Regulars . . . | 5.03 | 0.19+ | 118 | 1,685 | 1,803 | 1 in 5.48 | 2,266 | 1 in 6.94 |
| Additional Force . | 1.27 | 0.08 | 36 | 236 | 272 | 1 in 3.58 | 339 | 1 in 33.00 |
| Volunteers . . | 0.83 | 0.08 | 129 | 1,189 | 1,318 | 1 in 13.18 | 1,831 | 1 in 40.01 |

Having appended a note to this table, explaining the comparatively small loss in battle of the "additional" and volunteer troops, it is proper to direct special attention to the comparatively greater losses from *ordinary* causes sustained by those troops, as shown in the following table. It is believed that the "additional force" had a *greater* number of men constantly in the field, in proportion to their aggregate strength, than either the regulars or volunteers, and that the volunteers had the smallest number in proportion to their aggregate force. The "ratios" in Table III. are therefore too high for the "additional force," and too low for the volunteers.

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[1] The regiments of volunteers were mustered into service for unequal periods, from three to twelve months. The *average* period of their service is given in this table as officially reported by the Adjutant-General of the Army. As nothing is further from the intention of the compiler than to lead to erroneous conclusions, the reader is desired to bear in mind, while examining this table, that the proportion of volunteers actually engaged in battle was relatively less than that of either the "additional" or regular troops; that their period of service was very much less; and also the fact that the "additional force," as well as the larger portion of the volunteers, were not brought into service till after many of the battles had been fought. The relative loss in battle of these troops was, from these circumstances, of necessity less than that of the regular troops.

No. III.—*Table showing the Number of Deaths from Ordinary or Accidental Causes, and the Numbers "Invalided Home," or Discharged for Disability.*

| FORCES. | Total strength, officers and men. | Period of service. | ORDINARY AND ACCIDENTAL DEATHS. | | | | |
|---|---|---|---|---|---|---|---|
| | | | Officers. | Men. | Total. | Loss per cent. | |
| | | | | | | Per month. | Total. |
| BRITISH ARMY. | | | | | | | |
| Regulars . . . | 97,864 | 25 | 143 | 15,667 | 15,810 | 0.64+ | 16.15 |
| UNITED STATES ARMY. | | | | | | | |
| Regulars . . . | 15,736 | 26 | 49 | 2,713 | 2,762 | 0.67+ | 17.55 |
| Additional Force . . | 11,186 | 15 | 36 | 2,085 | 2,121 | 1.26+ | 18.96 |
| Volunteers . . . | 73,260 | 10 | Not stated | 6,448 | 6,448 | 0.88 | 8.80 |

| FORCES. | INVALIDED AND DISABLED. | | | Aggregate loss. | Total loss per cent. | Loss per cent. per month. | Loss per cent. per annum. |
|---|---|---|---|---|---|---|---|
| | Total officers and men. | Loss per cent. | | | | | |
| | | Per month. | Total. | | | | |
| BRITISH ARMY. | | | | | | | |
| Regulars . . . | 16,050 | 0.65 | 16.40 | 31,860 | 32.55 | 1.30 | 15.60 |
| UNITED STATES ARMY. | | | | | | | |
| Regulars . . . | 2,155 | 0.53 | 13.69 | 4,917 | 31.24 | 1.20 | 14.40 |
| Additional Force . . | 881 | 0.52+ | 7.87 | 3,002 | 26.83 | 1.79 | 21.48 |
| Volunteers . . . | 9,169 | 1.25 | 12.51 | 15,617 | 21.31 | 2.13 | 25.56 |

Assuming that in the British army, and in the regular and volunteer troops of the United States, the average number of officers and men actually engaged in the campaigns through the entire period of the war, or of their term of service, was *one-half* of the aggregate number mustered or received into service during the war; and that in the "additional force" this average was *two-thirds* of its aggregate strength (believed to be a near approximation to the true average), we have the following results:—

| FORCES. | Term of service. *Mos.* | KILLED IN BATTLE AND DIED OF WOUNDS. | | DEATHS: ORDINARY AND ACCIDENTAL. | | INVALIDED AND DISABLED. | | LOSS PER CENT. FROM ALL THESE CAUSES. | |
|---|---|---|---|---|---|---|---|---|---|
| | | Loss per cent. | | Loss per cent. | | Loss per cent. | | Loss per cent. | |
| | | Total. | Annual. | Total. | Annual. | Total. | Annual. | Total. | Annual. |
| British Army | 25 | 9.75 | 4.68 | 32.31 | 15.48 | 32.80 | 15.72 | 74.86 | 35.88 |
| U. S. Army | 26 | 10.06 | 4.56 | 35.10 | 16.20 | 27.38 | 12.60 | 72.54 | 33.36 |
| Additional Force | 15 | 1.91 | 1.51 | 28.44 | 22.68 | 15.74 | 25.02 | 46.09 | 49.21 |
| Volunteers | 10 | 1.25 | 1.49 | 17.60 | 21.12 | 25.02 | 30.02 | 48.87 | 52.63 |

It is possible that the "loss per cent." on the basis *assumed* in the above table may give a higher ratio than the true one. This is more likely to be the case with regard to the British army than with that of the United States;

for although the precise data are not at the command of the writer in either case, he is familiar with the details of the official returns of the one army, and knows little or nothing respecting the records of the other. That the average assumed does approximate somewhat to the true one for the British army, may, with some reason, be inferred from the fact, that the annual loss per cent. in officers and men, calculated upon that basis, approximates the loss sustained by that army in the Peninsular war. In a paper compiled by Mr. Edmunds from returns in the Adjutant-General's office—quoted by Sir George Ballingall in his work on *Military Surgery*—it is stated that, "in the Peninsular army, averaging a strength of 64,227, including officers and men, the annual ratio of mortality, from the 25th December, 1810, to the 25th May, 1813, was *ten* per cent. of the officers and *sixteen* per cent. of the men." On the basis assumed in this table, the annual *mortality* of officers is 9.48 per cent., and that of the men 20.64 per cent.

In stating the average number of volunteers in the field at one-half their aggregate strength, the error, if any, is in favour of the volunteers; for if, as the writer believes, their average force was less than that assumed, the ratio of mortality would be higher. The difference in the loss of life and of health between regular and irregular troops, shown in these tables, is, in the most favourable view, and with every allowance for error in the returns, sufficiently great to render the fact one of national importance.

Since the above was written, the report of the Minister of War to the Emperor of France, respecting the affairs of the Army of the East, has been received. As that report gives the aggregate number of deaths occurring in the army, without designating separately those who were killed in battle or died of wounds, no attempt has been made to incorporate the French statistics in these tables.

The report shows that France sent 309,268 soldiers to the seat of war. Of this number 62,492 died previous to the declaration of peace, March 30, 1856, and 4,564, between that period and the final evacuation of the Crimea, July 5, 1856; making 67,056 deaths. If to this be added the missing, and those lost in "la Sémillante," we have a total loss of 69,229 men. There returned to France 65,069 men, "on leave or on sick leave." This class is *supposed* to correspond with the "Invalided Home" of the British, and the "Discharged for Disability," of the United States returns, and will be so considered in the following table, which is intended to show the actual loss in effective men sustained in these wars, by France, England, and the United States.

| ARMY. | Aggregate force. | M'ths in service. | Total died. | Loss p. cent | | Total invalided. | Loss p. cent. | | Total loss. | Loss p. cent. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total. | Annual. | | Total | Annual. | | Total. | Annual. |
| FRENCH . . . | 309,268 | 25 | 62,492 | 20.20 | 9 72 | 65,069 | 21.04 | 10.08 | 127,561 | 41.24 | 19.80 |
| BRITISH . . . | 111,313 | 25 | 21,097 | 18.95 | 9.12 | 16,308 | 14.65 | 6.96 | 37,405 | 33.60 | 16.08 |
| UNITED STATES . | | | | | | | | | | | |
| Regulars . . | 15,736 | 26 | 3,554 | 22.58 | 10.44 | 2,155 | 13.69 | 6.24 | 5,709 | 36.27 | 16.68 |
| Additional Force | 11,186 | 15 | 2,264 | 20.23 | 16.20 | 881 | 7.87 | 6.24 | 3,145 | 28.10 | 22.44 |
| Volunteers and Vol. Staff . | 73,532 | 10 | 7,078 | 9.62 | 11.54 | 9,216 | 12.53 | 15.03 | 16,294 | 22.15 | 26.57 |
| Total, U. S. Army | 100,454 | .. | 12,896 | 12.83 | .. | 12,252 | 12.19 | .. | 25,148 | 25.02 | .. |

FORT RILEY, KANSAS TERRITORY, *November*, 1857.

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## ART. IV.—*Experiments with Bibron's Antidote to the Poison of the Rattlesnake.* By WILLIAM A. HAMMOND, M. D., Assist. Surg. U. S. Army.

SOME four years since, Prince Paul, of Wurtemberg, the celebrated naturalist, communicated to my friend, Mr. De Vesey, the results of some experiments performed before the French Academy of Sciences by Professor Bibron, relative to an antidote to the poison of the rattlesnake. According to Prince Paul, Professor Bibron allowed a rattlesnake to bite him in the lips, cheeks, &c., and, by taking the antidote discovered by him, prevented all alarming symptoms, and, in fact, suffered no inconvenience therefrom.

The antidote in question, as stated by Prince Paul, is prepared according to the following recipe: ℞.—Potassii iodidi gr. iv; hydrarg. chloridi corros. gr. ij; bromini ʒv.—M. Ten drops of this mixture diluted with a tablespoonful or two of wine or brandy constitute a dose, to be repeated if necessary. It must be kept in glass-stoppered vials well secured.

Prince Paul forwarded a small quantity of the above mixture to Mr. De Vesey, who used it successfully in the cases of two men bitten by rattlesnakes near his residence in Iowa.

During a recent expedition to the Rocky Mountains, I had several opportunities of testing its efficacy, and, since my return, have performed additional experiments with it. The results have been, upon the whole, exceedingly satisfactory, and I think that when taken in time it may be entirely depended upon in the poisonous wounds of the rattlesnake, and, perhaps, also in those of other venomous serpents.

1*st Experiment.*—Heinrich Brandt, Acting Hospital Steward, was bitten, on the 2d of July, 1857, in the index finger of the right hand by a large rattlesnake (*crotalus confluentus*), which he was in the act of putting into a jar for preservation. The snake inflicted a very deep wound, and hung by his fangs to the finger for a second or two before it could be detached. About four minutes after the bite, and before much pain or swelling had ensued, I administered one dose of Bibron's antidote. The symptoms almost immediately disappeared. Forty minutes after giving the first dose the pain and swelling returned attended with considerable throbbing. I repeated the medicine, and in less than five minutes the finger had regained its natural appearance, and all pain and pulsation had vanished. He remained perfectly well and resumed his duties in an hour from the reception of the injury.

2*d Experiment.*—A very large rattlesnake was made to bite a young wolf (*Canis occidentalis*), about three months old. The serpent wounded the animal severely in the left flank. Fifteen minutes after the bite the leg was much swollen, and the wolf exhibited signs of great uneasiness, yawning, stretching, and looking about in an anxious manner. These symptoms continued to increase in intensity till inability to stand, drowsiness, and slight convulsive movements ensued. I now (thirty minutes from the infliction of the wound) gave six drops of the antidote, with the almost instantaneous disappearance of the observed symptoms. In a few minutes afterwards the animal ate a large piece of meat.

3*d Experiment.*—On the following day the same snake was made to bite the wolf three times in the space of five minutes, in the flank, neck, and chest. In two minutes after the last bite the effects of the poison were evidenced by the inability of the wolf to stand, gasping respiration, and a fixed expression of countenance. Some delay occurred in getting the antidote ready, and before I could administer it all signs of life had apparently ceased. Nevertheless, I placed six drops far down the throat where it seemingly remained, as no effort of swallowing was perceived. However, in one minute respiration again commenced, and the heart could be felt to pulsate. The wolf lived for twenty-seven minutes, and then died comatose.

The rapidity of the action of the poison in this case, owing to the large quantity introduced into the system, prevented a successful issue. The good effects of the antidote were, however, sufficiently apparent to every observer, and I have no doubt that, had it been given before the faculty of swallowing was lost, the life of the animal would have been saved.

4*th Experiment.*—After my return to Fort Riley, a large *Crotalus confluentus*, which I had brought with me from the Rocky Mountains, was made to bite a dog five months old. The wound was made in the right shoulder. The poisonous effects of the bite commenced in ten minutes, causing gasping respiration, inability to stand, &c. I attempted to give a dose of the antidote but the dog would not swallow, and I had no means at hand by which to introduce it into the stomach. I again tried to administer the remedy but without success. The third dose was inhaled into the lungs. By this time the dog was perfectly senseless, and was dead in forty-five minutes after the infliction of the bite. Very slight swelling occurred in the wounded part.

5*th Experiment.*—Forty-five minutes after the last experiment the same snake was made to bite another dog of the same litter as the preceding. The wound was inflicted in the lower jaw very near the mouth. At the end of three minutes, and before any violent symptoms ensued, a dose of the antidote was given. The dog swallowed it readily. Five minutes afterwards the animal seemed very uneasy. Respiration was accelerated, and he preferred to lie down in the shade. At the end of about fifteen minutes he could stand with difficulty; and, as the sickness appeared to be on the increase, another dose was administered. Nearly half of this was lost. Slight swelling was now perceived in the face and neck. When roused the animal would walk a few yards though with great difficulty, and evidently preferred rest and quiet. About one hour after the bite he lapped a little milk and seemed to be better, wagging his tail when spoken to, and walking with less effort. No increase of the symptoms occurred, and, in fact, the dog was, to all appearance, perfectly well in two hours after the reception of the injury, except that slight swelling of the under jaw still remained. I saw him no more till next morning, when this had disappeared, and he was as active and lively as ever.

I had no further opportunities of repeating the experiments with other animals. During my absence, however, the antidote was used by Dr. Coolidge, U. S. Army (to whom I am also indebted for assistance in the latter experiments), in the following case, of which he has favoured me with the subjoined account:—

> "In July, 1857, a girl, aged fifteen years, was bitten at Fort Riley, by a rattlesnake, on the dorsal aspect of the first phalanx of the ring finger of the right hand. In a few moments the finger became swollen and bluish, and when I first saw her, about ten minutes after the receipt of the wound, the forearm had begun to swell, and pain extended to the elbow. She was depressed and somewhat nauseated. An elder sister had sucked the wound from the first instant. There being sufficient space above the wound, I applied a cord tightly around the finger, and then made a free incision down to the bone. As soon as the articles could be procured from the hospital, I gave 10 drops of the bromine mixture diluted, and injected into the wounded finger the preparation recommended by Dr. David Brainard, of Chicago, Illinois. (See *Annual Report, Smithsonian Institution*, 1854.) Viz: ℞.—Iodinii gr. x; Potasii iodidi gr. xxx; Aquæ destillatæ f℥j. Solve. The patient expressed herself relieved after the first dose of the bromine; a second was given in twenty minutes. The solution of iodine injected caused severe smarting pain; the fluid and air from the syringe could be felt a little above the wrist, and ultimately caused suppuration of the cellular tissue on the back of the hand. Nothing more was done. The girl recovered."

In conjunction with the mixture referred to in this paper, it will be observed that Dr. Coolidge laid open the wound and injected the cellular tissue with tincture of iodine, as recommended by Dr. Brainard, of Chicago, so that the favourable result in this instance cannot be attributed solely to the use of Bibron's antidote.

## ART. V.—*National Hotel Endemic. Autopsy; with Remarks.* By JAS. J. WARING, M. D., Washington, D. C.

IT is well known that a singular disease broke out in one of the most popular and frequented hotels in the city of Washington, at a time (in the months of January and March of the Inauguration year) when that hotel was most densely crowded with the distinguished and known from every section of our common country. So universal and yet so local was the disease that scarcely an individual escaped who remained for any length of time within the walls of the hotel; whilst not a case is on record as occurring out of its precincts, however near. This morbific agent, so powerful, so all pervading, and yet boxed up within four narrow walls, *what was it?* Much abstract and pointed discussion has arisen as to the nature of this agent, some supposing it to be a mineral poison—arsenic or some of its preparations; others to be a miasm created by the defective sewerage (notoriously bad) and accumulated by the defective ventilation (equally bad) of that hotel. By accident I was present at and took an active part in the only autopsy made, to my knowledge, upon any victim of this strange disease. Major George McNeir, aged 64, a citizen of Washington, dined at the hotel about the period of its first outbreak. No period of incubation intervened for him. The disease manifested itself before retiring to rest on the very day of the fatal dinner, and never left him afterward. An autopsy in such a case was of evident interest, not only to the scientific but to the general public. Therefore, by the request of Drs. R. K. Stone and J. E. Morgan, the committee appointed by the Board of Health to investigate this matter, the following gentlemen attended to aid in conducting it, viz: Dr. Wm. Jones, President of the Med. Society, D. C., and Attending Physician; Thos. Miller, Prof. of Anatomy, National Medical College; Prof. E. W. Hilgard, Analytical Chemist, Smithsonian Institution; Dr. C. F. Force, Commissioner of Health; Dr. Jas. J. Waring, Prof. of Physiology, Nat. Med. College.

Some few weeks afterward notes of the autopsy were sent to me by Dr. R. K. Stone, with the request that I would make some report of them, stating at the same time the following as his reasons for so doing: "1st, that I had not seen or treated a single case of the disease, and up to the time of the *post mortem* had not been specially interested in anything referring to it; 2d, that I was not a member of the Board of Health, who had already published its opinion of the *cause* of the endemic; therefore that I would not be influenced to make use of the material here so opportunely afforded to protect or sustain a previously expressed opinion or foregone conclusion." Desirous of carrying out the wishes of Dr. Stone, so expressed, my comments are made solely and entirely in reference to the history, symptoms, and pathology of the present case. The history and symptoms are given in the following letter: though not communicated by one in the profession, they are described graphically and with sufficient accuracy.

Washington, *June* 20, 1857.

Dr. Wm. Jones:

Sir: At your request we (my mother, brothers and sisters) herewith furnish you with our recollections of the symptoms, &c. attending the illness of my lamented father, which resulted in his death on the morning of the 12th inst. It may not be out of place to preface our recollections with a statement of the fact that up to the commencement of his late sickness he had enjoyed most remarkable health, never having, within our recollection, been confined two successive days to his bed.

On the 8th of January last (in company with a friend who was attending the Convention of the Soldiers of the War of 1812) he dined at the National Hotel in this city: returning home between 9 and 10 o'clock that night, he complained to my wife of nausea, and great pain in the stomach (my mother being with my sister, who was quite sick): after undressing he called for a basin and chamber, which were furnished him, and my wife left his room: returning soon after, she found him leaning against the bed and still complaining of suffering much pain, so much so as to need her assistance in getting to bed: the chamber indicated that he had had a copious evacuation. The next morning my wife carried his breakfast to his room: he ate but little, and stated that he had had frequent evacuations during the night, and still complained of the pain and nausea. My wife suggested to him that he had probably indulged his appetite too freely the previous day at the hotel. He stated to her that he ate very little meat, but ate heartily of soup, and particularly of float. I myself heard him say that before going to the table he went to the bar of the hotel and drank either whiskey or brandy.

About 9 o'clock he went out, as usual, to attend to his business, but soon returned, very much debilitated. He continued to complain of the pain and sickness, and suffering from frequent discharges from the bowels; also complained of great thirst, and burning in the mouth and throat, which created a constant desire for ice water. The symptoms as above stated continued without intermission (the frequency of the evacuation to some extent restrained by the use of laudanum) until Sunday, Feb. 8, on which evening he was much prostrated by frequent and copious discharges—so much so that he fainted under the operations, in which state you saw him and administered to him. This attack confined him to his bed eight or ten days, from the prostration of which he never fully recovered; but the disease appeared to gain upon him, rendering his nights almost sleepless on account of the frequency of his stools, notwithstanding he was, on an average, taking 75 drops of laudanum a day. About this time, in addition to his other symptoms, he complained of a hardness or enlargement of the abdomen or liver, also of great internal heat. Although at this time very feeble, he attended partially to his business until about the 1st of March, when he again was brought to his bed, and on the night of the 2d of March was so ill as to require the family to be up with him all the night. This attack confined him to his bed and room until about the 10th of March, and left him with a fever, from which his feelings induced him to believe that he was rarely if ever free. From this time he frequently complained of acute pain in his extremities: about this time he was also taken with a cough, which increased rapidly and was at times very troublesome, particularly in his last illness. His face, which up to this time—say middle of March—was apparently bloated, and his complexion muddy and unnatural, now became very clear and transparent, remaining so for several days, when it again assumed the former muddy and unnatural appearance, accompanied with great dulness of the eyes and a heaviness of the brow.

At the beginning of his illness he had very little or no appetite, but during the last several months it became so great that he could scarcely satisfy it, although he indulged it to a very great extent. His great desire for ice water was produced no less by thirst than by the great burning, which he frequently described as commencing at the roof of his mouth, and continuing in a straight line to his stomach, which sensation continued to increase up to his death.

The interval, say from 1st April to his death, was mostly passed in bed, or in his room, during all of which time he suffered greatly from an almost constant pain in the stomach and bowels, as well as from the great burning in the mouth and throat.

On the 4th of June the disorder of the bowels became greater than usual, and on the night of the 5th for the first time he passed blood, which discharges continued at intervals of about a half hour, until to within a few hours of dissolution, which occurred on the morning of Friday, the 12th inst.

I remain, &c. &c. &c. THOS. S. McNEIR.

The points of interest in the above recital may be summed in a very few words. It is to be observed that whilst sickness, nausea and pain are spoken of no mention is made of *vomiting*. Moreover a copious evacuation marked the very first step in the disease, and its frequent recurrence is evidently dwelt on as *the* symptom: nausea simply continued. Throughout the day which succeeded the onset of disease the discharges were still frequent, and now he complained of a symptom so common in profuse diarrhœa—great thirst and burning in the mouth and throat. These symptoms, viz., thirst, burning, and frequent evacuations (to some extent restrained by laudanum), we are told continued without intermission for *thirty* days, when the great symptom—the copious evacuations—became aggravated to such a degree as to produce complete prostration, even fainting. This prostration, these evacuations, continued occasionally checked and again aggravated, according to the history, till his death. Fever appeared 62 days after the onset of the disease, and continued sufficiently to be noted by the patient to the end. In the onset of all disease, perturbation of the functions causes loss of appetite, but when the system becomes accustomed to a drain inordinate appetite succeeds. Such was the fact in the case of McN. He was not compelled to keep his bed until the 1st of April, three months after he took sick, and during this time occasionally attended to his business. He commenced to pass blood from his bowels only eight days before his death, and he died five months after having eaten and drank and breathed within the walls of the National Hotel.

*Summary.*—The earliest and throughout the most prominent symptom was a simple but profuse diarrhœa, with its concomitants, insatiable thirst, burning in the mouth and throat, inordinate appetite, and complete prostration. Death was the result of the exhaustion of that profuse diarrhœa and of the steadily but slowly progressing disease of which that diarrhœa was but a symptom. No fever appeared for 62 days after the attack, and then it was obscure, not violent. Blood was passed 129 days after. Death occurred in 131 days.

What mineral poison will produce such a series of symptoms? What miasm is known to produce such a disease?

*Autopsy,* 16 hours after death.—Temperature 80°. On laying open the abdominal parietes the peritoneum, both visceral and parietal, was found discoloured, red, but varying in intensity in different parts; it was by far the most marked on the surface of the transverse colon; here it deepened in intensity almost to a purple hue. The great omentum was decidedly congested, and darkened of a dark red hue. The appendicæ epiploicæ were also congested and red. The colon, as before remarked, was externally of a dark red, whilst the stomach and lesser omentum were perfectly normal in colour. This colour existed on the surface of the ascending and descending colon, but to a much less marked degree, except at the cæcum and sigmoid flexure, where the colour again deepened, though not to the same intensity. There was no effusion in the abdominal cavity of either coagulable lymph or fluid.

*Stomach.*—On opening the alimentary canal we found—in the *stomach*, no ingesta but a little mucus and discoloured fluid. The mucous membrane was slightly thickened near the pyloric orifice, but was not softened. It was of a dirty gray colour with stellated points of congestion near the cardiac orifice. On the lesser curvature and posterior wall, and midway between the cardiac and pyloric orifices a circular ulcer existed, deep, with sharp undermined edges and with a fungous growth of exuberant granulations overhanging and projecting. The ulcer penetrated to the muscular coat, which formed for it a smooth base.

*Duodenum.*—A bright saffron yellow fluid, homogeneous and abundant, filled the duodenum. This viscus was perfectly healthy in appearance, and stained with healthy bile.

*Jejunum.*—The contents were mucoid, and of a duller yellow hue. In the first few inches, the *valvulæ conniventes* were reddened. The solitary glands were enlarged and distinctly prominent, looking like large pins' heads. Peyer's patches were remarkably distinct. These glands did not seem so much to be diseased as to *have been* diseased. There was a deposit of pigment in spots dotting over their whole surface, and they were slightly projecting. There was no ulceration or marked softening of the mucous membrane, and the coats were not much thickened.

*Ileum.*—The whole course of this intestine was in a perfectly healthy condition. The contents were thicker than in the upper portions of the alimentary canal, containing fresh and healthy-coloured bilious matter. The glandulæ agminatæ were universally and distinctly marked, looking precisely as they did in the jejunum, but much more abundant.

*Cæcum and Colon.*—The ileo-cæcal valve was in an ulcerated state, an honey-comb like ulceration in myriad spots. These little ulcers were circular, and did not penetrate beyond the submucous cellular tissue. The coats of the cæcum and commencing colon were enormously hypertrophied, more especially the muscular and cellular. There was a reddish and fungoid elevation and thickening here and there of the mucous membrane. In the colon, just beyond the cæcum, for 5 inches in total length, and 9 or 10 in number, partly upon and partly between the rugæ were seen transversely linear projections of the mucous membrane. These were hard, prominent, granulated, and ulcerated, so as to give an honey-combed appearance. Their surface was of a dark-brownish red colour. These *placques* were from ½ inch to an inch in length, and from a ⅓ to ½ in. broad, and elevated about ⅛ in. above the mucous surface. The transverse and descending colon was similarly diseased. The mucous coat was much thickened, and covered with minute ulcerations, circular in character, and in no case penetrating beyond the submucous cellular tissue. The ulcer mentioned as existing near the cardiac orifice of the *stomach* alone evidenced a tendency to perforation. The transverse colon was more decidedly congested and diseased than any other part of this intestine except the cæcum before described. Here too the little ulcers were so abundant and so closely set that they became fused together, so as almost to lose their circular character. It was matter of astonishment to observe the extent of surface denuded of mucous membrane. It remained intact only in patches, and yet the denuded cellular coat had no where ulcerated beyond the muscular coat. The rectum presented the same marks of disease as the cæcum.

All the other important organs of the body, as heart, lungs, liver, &c., were in a healthy state; no further lesions of any kind were found.

Such an autopsy could not but impress me with certain convictions. These I have attempted, though imperfectly, to embody in the following remarks.

In the stomach of McN. no evidences existed of previous or present gastritis; no evidences of the application to its coats of any corrosive substances. This too is in perfect accordance with the symptoms during life. The circular ulcer found on the lesser curvature and posterior wall, and midway between the cardiac and pyloric orifices was recent, and corresponds to the perforating ulcer of Budd and Rokitansky, and the chronic gastric ulcer of Cruveilhier. The following quotations will make this more than probable.

Diseases of the Stomach, by George Budd, M. D., F. R. S. American edition. (Pages 91, 92.)

> "In most cases, the stomach presents no marks of disease, except a single ulcer on its inner surface. This ulcer is seldom larger than a shilling, but sometimes, especially when it is situated on the posterior wall of the stomach, grows to the size of a crown piece, or even larger than this. It is generally circular or oval, and in all cases extends through the mucous membrane, the edges of which are clean-cut as if a portion of the membrane had been punched out; sometimes the mucous membrane only is destroyed, and the ulcer has then an even base, formed of the submucous cellular tissue. * * * * The ulcer is generally situated along the lesser curvature of the stomach, or near it; usually nearer the pyloric orifice than the cardiac; and much more frequently on the posterior wall of the stomach than on the anterior." * * * "In most cases of simple ulcer of the stomach the ulcer is solitary."

See also Rokitansky, vol. ii. page 36, American edition, for precisely similar quotations.

We stated, it will be remembered, that no evidences existed of inflammation in the stomach; the duodenum, jejunum, and ilium, in like manner, presented no evidences of inflammation of any kind. One lesion of marked interest presented itself, however; this was the enlargement and development of the solitary and agminated glands. Peyer's patches were scattered over with black spots, as if from previous ulceration and eventual healing, with a deposit of black pigment in the little cicatrices.

The seat of the true disease which produced the death of McN. was evidently not above the ileo-cæcal valve. The moment, however, this narrow boundary is reached, extensive disease presents itself. Honey-comb like ulcerations of the mucous membrane on the very edge of the valve, and continuing with the same characters, though even more extensive, up and around to the rectum; thickening of all the coats beyond this point, even forming thick dark red ridges for some distance beyond the valve; red congestion of these coats through to the peritoneum; congestion and irritation if not inflammation of the peritoneum—these were some of the results of this disease. The thickening of the coats referred to was most marked in the cæcum and rectum; the coats were thicker however in the transverse colon than in either the ascending or descending colon. The transverse colon, cæcum, and rectum, were plainly the chief seats of disease. The coats through to the peritoneum in these parts were intensely red, especially those of the transverse colon. The congestion of the peritoneum was plainly due to a transmission of irritation *or* inflammation through the mucous, cellular, and muscular coats. It should be noted that there was no fluid in the peritoneal sac, and no secretion of plastic lymph or pus, the usual results of inflammation, and yet the great omentum was reddened and darkened, showing that this irritation was rapidly becoming of a very serious nature.

The disease plainly commenced in the mucous coat, affecting the other coats only from contiguity of surface. A wider conclusion may still further be drawn from this case. Death was the result of the extensive disease of the mucous coat of the large intestine. The external agent, whatever it was, seems to have confined its ravages entirely to this intestine, commencing on the very edge of the ileo-cæcal valve, and terminating only at the sphincter ani. Further we may conclude, by combining the symptoms with the known pathology that the cause, whatever it was, attacked at the very outset the mucous membrane of the large intestine, and did not produce any change in the stomach and small intestines, sufficient to affect or modify the symptoms, which were the result solely of the lesions in the large intestine.

The perforating gastric ulcer was recent, and no doubt the result of the depraved and weakened constitution of the patient. It is possible that the changes in the glands of the small intestines were the result of some typhoid condition of the blood, possibly of an irritation transmitted to them from the colon.

The mucous membrane of the large intestine was so extensively ulcerated in places as to be left only in little islets, whilst in other places these ulcerations assumed the form of circlets, leaving the membrane otherwise intact, and giving the honey-combed appearance, before referred to. In fact the destruction of this membrane was so extensive that it became matter of astonishment the individual could live at all with such a condition of things. These myriad ulcers, whether small and well-defined, or large and more irregular, yet invariably affected the circular form, did not penetrate beyond the submucous cellular coat, and presented at their bases neither softening, darkening exudation, *nor* other evidences of a tendency to penetrate further or perforate.

Rokitansky, whose authority in pathology none will doubt, speaks of four distinct forms of inflammation of the large intestine, viz: *a*, erythematous; *b*, exudative; *c*, typhous; *d*, dysenteric. Under which of these forms should we classify the disease before us? The following quotations, I think, will determine:—

> "Catarrhal (erythematous) inflammation—or, in a lower degree, mere catarrhal irritation, catarrh—presents itself as genuine entero-catarrhus, with a discharge of a thin muco-serous secretion in catarrhal diarrhœas, namely, as a consequence of suppressed cutaneous exhalation. It may result from mechanical or chemical, &c. &c." * * *; "or, lastly, it frequently shows a specific, contagious property (*exanthematic typhoid catarrhs*) * * *." "Catarrh is either acute or chronic, and it either attacks the mucous membrane uniformly, *or is developed mainly in the villi and follicles.* * * * Chronic inflammation rarely admits of a complete cure. It is generally followed by a blennorrhœic condition; and we thus find, in well-marked cases, a permanent dilatation of the vessels established, with the following alterations in the tissues:" * * *
>
> "Increase of substance, or permanent tumefaction of the mucous membrane, its follicles, or villi, with increased density and consistence (hypertrophy), giving rise in higher degrees to elongation of the membrane and formation of folds and polypi; hypertrophy of the submucous cellular tissue and the muscular coat, &c. &c." * * *
>
> "The seat and extent of the catarrhal inflammation and of the blennorrhœa, differ according to the cause." * * * "They are *not common* in the small intestine, their usual seat being certain portions of the *large intestine*, viz., the cæcum and rectum. A peculiar disease, which we must here advert to, is ulcerative inflammation of the follicles of the colon, such as we find in lientery, brought on by tedious diarrhœas. An ulcer results, which is distinguished from the catarrhal ulcer just described, by the shape which it derives from the follicle, and still more by the total absence of reaction, which is brought on by the excessive destruction of tissue, and which produces an atonic and relaxed state of the tissues at the base. In this disease, which in the dead subject is commonly not observed until it has committed extensive ravages, the follicles are at first tumefied in various degrees, and consequently project as smaller or larger round conical nodules on the internal surface of the intestine, being surrounded by a dark red halo. Ulceration now ensues in the interior of the follicle, the small abscess penetrates the mucous membrane within the vascular halo, and a fringed ulcerated opening of the size of a millet-seed appears, which leads to a small follicular abscess with red spongy walls. The ulceration continues, and the follicle is eaten away." * * * The ulcer is of the size of a pea or lentil, round or oval, the mucous membrane at the circumference is pale, slate-coloured, livid, and much relaxed; the cellular tissue at the base is dull-white, anæmic, sanguineous or dark blue. At this period a secondary destruction of the intestinal mucous membrane commences, which proceeds with great rapidity. The original follicular ulcer now enlarges." * * * "Several ulcers coalesce." * * * "The most extensive destruction is found to occur in

the sigmoid flexure and the rectum. *It is always confined to the colon.*" * * * "On account of the alvine discharges, which are invariably associated with this ulcer, the affection may not inappropriately be termed *ulcerative diarrhœa.*"[1] * * *

It must be evident to those who have read the above quotations, that the disease of which Major George McNeir died was a superficial erythematous or catarrhal inflammation of the mucous membrane of the large intestine. The attack assumed the chronic form, and lasted 131 days. It evidently also had its seat in the follicles of the large intestine, and plainly corresponds to the disease called by Rokitansky "Follicular Erythema or Catarrh" of the large intestine, or "Ulcerative Diarrhœa."

Could arsenic, in any of its forms, whether introduced into the stomach, into the blood directly, or *inhaled* in the form of arseniated hydrogen, produce such a disease? Nothing can be more easily answered. Consult Taylor, Christison, Budd, Rokitansky, &c.

Every candid mind must agree that it cannot. Can, then, foul emanations from bad sewers, pent up and breathed only for four or five hours, produce such a disease? I confess myself incapable of producing a single authenticated case where such a cause was followed by such a disease. Yet I leave this subject with my mind convinced, even though this be a new observation of the mysterious effects of miasm, that this and this alone was the cause of the death of the unfortunate gentleman, the subject of the present comments.

We append the following letter from Dr. J. C. Hall, of Washington, D. C., who was so fortunate as to attend a large number of those affected by this disease during the whole period of its continuance. His observations led him to a certain conclusion already published. He now kindly communicates a fact which confirms him in his previously expressed opinion.

WASHINGTON, *Nov.* 30, 1857.

DEAR DOCTOR: The National Hotel was closed about the first of April, and the furniture was sold in the rooms about the middle of June. I am informed by the auctioneer that he and several of his assistants were attacked with a diarrhœa similar to that which prevailed in the house during the winter. They neither ate, nor drank in the house. This fact (of which I have no doubt), to my mind, affords conclusive evidence of the atmospheric or miasmatic theory of this very peculiar disease. Yours, truly,

DR. WARING. J. C. HALL.

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[1] Rokitansky, vol. ii. pp. 59, 60, 61, American edition, 1855.

WASHINGTON, D. C., *Nov.*, 1857.

## Art. VI.—*Adhesive Plaster the best Counter-extending Means in Fractures of the Thigh.* By D. Gilbert, M. D., Professor of Midwifery in the Medical Department of Pennsylvania College.

Since the publication of my first case of severely complicated fracture of the thigh (*Am. Journ.*, Jan., 1851), in which adhesive plaster was so successfully used in keeping up extension and *counter-extension,* I have had numerous opportunities of testing its value and confirming the good opinion then formed of it. In every case the necessary tension, however great the muscular resistance to be overcome, was kept up without abrasion of the surface, or pain as the result of pressure. In the cases of adults, or even younger persons, who could appreciate the importance of quietude in the treatment, these perineal bands seldom required renewal during the entire period of confinement. Adhesive plaster, when well applied to the surface, becomes united with the skin, so as to form a composite body; consequently friction and pressure are transferred to the areolar, adipose and other tissues beneath. These are characterized by histological and physiological endowments which fit them, in a peculiar manner, for the toleration of pressure and motion without pain or anatomical disturbance or lesion. The skin is thus protected, and, consequently, abrasion, excoriation, or ulceration, either or all of which are the usual products of pressure and friction upon its surface, when the ordinary perineal bandages are used, do not occur. The adhesive bands, moreover, act upon a surface much more extensive than that of their mere attachment, through the elasticity of the skin, and thus contribute still more to its protection in protracted extension and counter-extension. All who have treated fractures of the lower extremities must admit that freedom from suffering at the seat of counter-extension is a great desideratum; this being secured, another, equally important, viz., continued quietude of the fracture after reduction and the adjustment of the retentive apparatus, is also attained.

The following cases, which are extraordinary in their character, have been selected for publication at this time, in order that the attention of the profession may be more fully directed to the subject, and to demonstrate the great value of the plan in cases of extreme difficulty.

Case I.—C. Youngandrews, of N. 9th Street, aged eleven years, fell on the street and fractured his thigh obliquely, above its central part, June 12th, 1852. D. M. Fort, M.D., of Vine Street, became, at my request, associated with me in the case, both having been sent for simultaneously. The splint and apparatus described in my former communication, including adhesive extending and counter-extending bands, were applied. No pain, except at the seat of fracture, was complained of. In four and a half weeks the splint was permanently removed, complete union having taken place. During this period the anterior or upper counter-extending adhesive strip only required renewal. The cure in this case was not only accomplished in an unusually short period, which is mainly attributable, in my opinion, to the perfect quiescence secured by this method, but it is the more remarkable since this boy was slightly *non compos*, and, ordinarily, very difficult to control by his parents.

Case II.—Dr. Fort was so well pleased with the method by adhesive plaster, that he used it in the following case, which he has kindly furnished to me:—

A twin daughter, aged eighteen months, of Mr. D. Steinmetz, of this city, fell out of bed, May 29th, 1853, and fractured her right thigh near the trochanter. The fracture was reduced, and retentive apparatus, precisely as in the case of Youngandrews, was applied. In *thirty* days the cure was complete. The anterior counter-extending strip required renewal once during the treatment.

Case III.—The late Dr. N. C. Nancrede, of this city, requested me to meet him in consultation, June 9th, 1853, at the residence of Mr. A. Sieberlich, in Spruce Street. The infant son of Mr. S., aged *seven months and a half*, had fallen out of bed and fractured his thigh about its middle. The fracture was evident from the deformity and shortening. The following retentive apparatus was prepared. One light splint, about one and a half inch wide, to be applied from the crista of the ilium to a little below the knee; three short splints of the same width, for the anterior, posterior and inner aspects of the thigh; and numerous adhesive strips, eighteen inches long and one and a half inch wide. The splints were padded with wadding on the one side, so as to adapt them to the contour of the thigh. Adhesive strips were used, instead of the ordinary roller, in supporting the wadding upon the splints. Reduction of the fracture having been effected, the long splint was applied to the outer surface of the thigh, and fixed there by its covering of adhesive plaster, and adhesive bands applied to the knee and distal extremity, so as to maintain extension; whilst other bands were applied to the inside of the thigh, perineum, groin and proximal extremity of the splint, to secure counter-extension. The short splints were then applied and secured in place by adhesive strips instead of the ordinary roller. Thus, all the splints were held securely in their places by the adhesive plasters which composed their covering, as well as by the strips which encircled them and the thigh, and thus extension, counter-extension and coaptation were fully maintained. The motion of the hip and knee-joints was free, and the child was comparatively free from pain, immediately after this retentive apparatus was applied. The patient was not only carried about the house but taken to the family summer residence in the country and brought to town once a week for our inspection and the readjustment of the dressings, which were more or less displaced by the incessant movements peculiar to infancy. In four weeks from their first application the retentive means were removed, union having taken place without deformity or shortening.

Case IV.—I was summoned in great haste, May 2d, 1854, to Wm. Henry, aged nearly five years, son of T. N. Triall, residing in Noble above 9th St., who had just been run over by several coal cars on the Willow Street railroad in the vicinity. The accounts of the manner in which the accident occurred were very unsatisfactory, none but children having witnessed its occurrence. There was no evidence of the passage of car-wheels over any part of the body or the extremities. I found, upon examination, that the left thigh, above its middle, the tibiæ and fibulæ of both legs and both bones of the right forearm were fractured. There were numerous contusions on the body and extremities, and the fractured ends of the bones had lacerated the soft parts in their vicinity extensively, although the fractures were all simple. The usual splints, compresses, adhesive bands and rollers were applied. On inquiry I learned that H. Deitrich, M.D., of 10th St., was the family physician, who, at my request, was sent for and became associated with me in the case. The splints which were hastily provided for the first dressing, after a few days, were removed, and Dr. Gibson's modification of Hagedorn's splint was substituted; which, with the adhesive bands for extension and counter-extension, answered the indications in this case more fully than the ordinary splint, especially in restraining more fully the movements of the lower extremities. Our patient was totally unwilling to be confined, and made constant persevering efforts to disengage himself, which gave us a great deal of trouble in maintaining the proper adjustment of the retentive apparatus. Febrile reaction supervened on the second day of an active character, accompanied by delirium, which increased our already existing difficulties very greatly. By appropriate constitutional treatment and perseverance in the plan adopted to procure reunion of the fractured bones, this case, so unpromising in all its aspects in the commencement, was conducted to a happy termination at the close of two months, precisely, from the date of the accident, viz., July 2d. The splints and bandages were removed on that day, and, to my utter surprise, I saw our patient in the street with his playmates on the tenth of the same month. There is neither shortening nor deformity.

CASE V.—I was requested by B. Price, M.D., of N. 9th Street, to meet him in consultation September 12th, 1855, at 20th and Spring Garden Streets, in the case of a little girl, aged five years, the daughter of Mr. T. Kane. We found the left thigh-bone badly fractured in its upper third by the passage over it of a heavy earth-cart. The soft parts were seriously contused, and the deformity and shortening were remarkable. We provided a splint, about 2½ inches wide reaching from above the crista of the ilium to several inches below the sole of the foot. This was padded with cotton, so as to adapt it to the surface upon which it was to be applied. Bands of adhesive plaster were used for extension and counter-extension, as well as to all intervening parts except the seat of fracture, instead of the ordinary roller. After the adjustment of these retentive means, the child declared itself free from pain, except at the immediate seat of injury, and was moved from room to room without seriously deranging the dressings or interfering with the fracture. This child recovered, without deformity, in six weeks, although placed in most unfavourable circumstances as regarded ordinary attention—the father being constantly under the influence of liquor, and the mother having all the cares of the family resting upon her, without any one to aid her.

The following cases show the value of adhesive plaster as a means of extension and counter-extension in fractures of the leg:—

CASE VI.—Michael Gillis, drayman, æt. 40 years, had compound fracture of both bones of the right leg, caused by a kick of his horse on the 15th of December, 1852. Dr. Fort, of Vine Street, was called and requested my attendance in consultation. We found the tibia comminuted. A fragment measuring about one and a half inch in length, and comprising more than half of the diameter of the bone (tibia), was detached and required removal. The wound was large and ragged, owing to the fact that the horse had just been rough-shod. Gillis being a robust man, of large muscular development, very considerable extending and counter-extending force was necessary in effecting reduction. A modification of Hutchinson's splint, adapted to compound fractures of the leg, which I had used successfully on a previous case, was applied. For counter-extension four bands of adhesive plaster, about eighteen inches long by two inches wide, were used. These were applied spirally, so as to cross each other—the two anterior below the tubercle of the tibia, the two posterior at a point opposite; and as each one of these, in its spiral course, became lateral, in passing from below upwards, and from above down, they cross each other again directly opposite the joint, internally and externally, after which the balance, or the free proximal extremities, were passed through the holes in the upper end of the splint and securely tied.

The bands used in extension were applied in the usual way, laterally and extending below the foot in the form of a short loop. This received the strap of the tourniquet, the framework of which rested upon a cross-piece attached to the distal extremities of the splints, and thus, by means of the tourniquet, as in fractures of the thigh, extension and counter-extension were kept up. In this apparatus no support was provided for the posterior surface of the leg except that afforded by the straw mattress upon which he was laid, which was unsteady. To remedy this defect Dr. Fort suggested the use of the common fracture-box, altered so as to admit of extension by the tourniquet's resting upon a cross-bar below the foot, and counter-extension by passing the adhesive bands through the holes in the upper part of the sides of the fracture-box. To accomplish this the sides of the fracture-box were composed of three separate pieces each. The upper and lower on each side were firmly screwed to the bottom board, whilst the middle pieces only were attached by hinges. Thus, as extension and counter-extension were being kept up, the central segment of either side of the apparatus could be let fall away from the leg, and the wound exposed by opening the many-tailed bandage, whenever this became necessary.

The fracture box was removed at the end of the ninth week, without shortening or deformity. There was no pain complained of at the seats of extension and counter-extension during the entire treatment.

Case VII.—I was summoned in great haste to Mr. B. F. Dutton, on the 16th of March, 1853, who had fallen from the fifth story of Messrs. Hall & Boardman's factory, in Arch Street below Third, through the hatchway to the first floor, a distance of about fifty feet. Mr. D. is a large man, weighing about 200 lbs. He very imprudently tried the strength of a board which was laid across the opening in the floor of the fifth story by standing upon it. The board broke, and he fell. The force of the fall was received by his feet, they continuing to be the most dependent parts. The concussion was very profound, so that at first it was supposed he was dead. When I arrived reaction was gradually taking place. On a careful examination I found fracture of both bones of both legs near the ankle-joints. The fractures were oblique and irregular. In the right leg I had reason to believe that the lower fragment of the tibia was split longitudinally into two pieces. The malleoli were distorted in both legs, and, no doubt, the ligaments of the ankle-joints were extensively lacerated. There were severe contusions over the course of the spinal column, which were, doubtless, caused by striking against the floor as the body passed through the hatches. After sufficient reaction was established, he was conveyed on a settee, by his friends, to his residence in N. Twelfth Street above Poplar.

Assisted by Dr. Royer, of Schuylkill County, who happened to be near the place where the accident occurred, temporary bandaging, so as to support the parts after their reduction, was applied, and cold water dressing enjoined. An anodyne was given. Finding, next day, when reaction became somewhat excessive, that the muscular contractions could not be controlled in this way, and that there was danger of serious displacement, adhesive plasters were applied in the usual manner, except that those by which extension was made had to be confined in their attachments to the feet alone. By means of these and the many-tailed bandage the coaptated fragments were kept in place until it was deemed safe to use the immovable dressing, which, when applied several days after, answered a very good purpose in conjunction with the plan already adopted. On the *forty-fourth day* after the accident all retentive means were permanently removed. Mr. Dutton now has full use of his ankle-joints, not even using a cane in walking.

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## ART. VII.—*Case of Osteoid Growth connected with the Capsular Ligament of the Right Hip-Joint.* By A. F. SAWYER, M. D., one of the Surgeons of the "Hospital of the Sisters of Mercy," San Francisco, Cal. (With three wood-cuts.)

THE patient, a native of France, æt. 47 years, entered the hospital for treatment, March 16, 1857. He has a full adipose habit, with the general appearance of sound health.

His own account of the case is as follows:—

About a year ago his attention was directed to the presence of a small apparently movable tumour, on the anterior surface of the thigh in its upper third. At first it did not seem to increase in size, and gave him very little inconvenience. During the last six months, it has been rapidly enlarging, especially towards the ilium, attended with sharp pricking pains, exaggerated at night, more particularly after a hard day's labor. He has continued his occupation as a miner, until within a few weeks, when, becoming apprehensive as to the real nature of the disease, he for the first time solicited medical advice. He could give no rational cause for the origin of the tumour. His parents were healthy and long-lived; and although his previous history has been one of great exposure physically, he has never suffered much from general sickness. The only circumstance narrated, which can have had even an indirect bearing on his case, is in connection with an accident he met with about two years previously to the development of the tumour, at which time he received severe injuries in the back from a mass of earth falling upon him. He was not, however, so severely disabled that he could not rescue himself unaided, and afterwards walked some distance to his cabin. Something like six weeks elapsed before he could resume his usual employment, suffering more especially from severe pains in the lumbar region, attended with some swelling of the soft parts, and general sympathetic fever. No pain was felt about the pelvis. There was no lesion of its contained viscera, and he preserved an entire command over the motions of the lower extremities, without any symptoms whatsoever involving the ilio-femoral articulation. Within the last four months a lameness has gradually supervened, and latterly he has required a cane to assist him in locomotion.

On examination, there was found on the upper and anterior portion of the right thigh a large tumour extending from near the anterior-superior spine of the ilium downwards nine inches, in the direction of the long axis of the femur. Above, the tumour was widely expanded, apparently placed against the ilium, and covered in by the muscles of this region. Inferiorly, the tumour became gradually tapering, and its well-marked *bifurcated* extremity could be felt quite superficially beneath the skin. It had a hard cartilaginous consistency, and appeared to be movable, as was certainly the case in the lower and superficial portion of it. The integument was somewhat stretched over the tumour, but not discoloured. There seemed to be but little tenderness, and even with rough manipulation no complaint of additional pain. The pain, as described, was always of a pricking character, and confined to the tumour itself.

The right lower extremity was shortened five-eighths of an inch, when his body was in repose, yet the limb could be drawn down to correspond with its fellow. On rotation of the thigh, and in flexing and extending it upon the pelvis, a most extraordinary freedom of motion was found in the hip articulation, attended with extensive grating and crepitus, which could be heard some distance from the bedside. By forcible abduction and adduction of the limb, the head of the femur traversed the acetabulum abruptly, and with loud crepitus. There was certainly an unnatural laxity of the capsular ligament, perhaps rupture of the round ligament, and the grating indicated that the articulating surfaces of the joint were deprived of their natural cartilaginous coverings. The patient voluntarily, and without pain, could move his thigh in every direction; flexing it, rotating it, etc., yet always with the same grating sounds. These movements of the head of the femur, jumping about as it were in the acetabulum, were, to say the least, very peculiar. The patient does not at present, nor has he ever suffered the slightest pain in the articulation, either in walking, or even when the head of the femur is driven forcibly against the acetabulum. All the pain experienced, whether in a reclining or upright posture, is referred directly to the tumour, and becomes somewhat aggravated after over-exercise of the limb. He could bear the weight of his body on the affected limb, and walk about with tolerable ease without any support. The lameness in walking appeared to result rather from the shortening of the limb than from any loss of direct power over its movements.

He made no complaint of his general health, had a good appetite, and appeared strong and vigorous. Some general febrile symptoms were complained of, as thirst, dryness of skin, and constipation of the bowels. This condition of the system he reported as paroxysmal, although not preceded by chills, a remark of some importance, as the patient, during his residence in the mines, had often suffered from light attacks of fever and ague. Pulse 78, full and strong.

In our investigation of this case we could not make a decided diagnosis, and we shall now briefly consider the points of certainty or uncertainty connected with it.

The general appearance of the tumour, its position, solidity of texture, and particularly its bifurcated end, which was obvious to the eye as well as to the touch, where it protruded through the muscle beneath the integument, reasonably led to the idea of an exostosis, which had its origin from the upper part of the femur or some portion of the pelvis in the neighbourhood of the acetabulum, an examination of the bulk of the tumour indicating deep-seated attachments. These positive features of the case strongly demanding the diagnosis of solid bony growth, having its origin in bone, were negatived by the single fact of mobility, which, if not fully distinct in the mass of the tumour, was unquestionably so in the superficial, and from the singularity of its formation, in this connection, its most important part, since it could be readily grasped by the hand, and exhibited motion quite distinct from flexibility.

The consistency of the tumour was too great for simple sarcomatous, adipose or cystic growths; and for the same reason it was necessary to reject the probability of any purulent deposit, although the position might be an appropriate one for abscess connected with caries of the spine, especially in a case where, from the previous injuries which the back had received, we might have suspected the results of inflammatory action kindled up in the bodies of the lumbar vertebræ. The bifurcated end of the tumour forbids the idea of aneurism. Apart from this circumstance, it bore many points of resemblance in position and outline to a case of aneurism of a branch of the "profunda femoris" that recently fell under our observation, which was entirely without bruit or pulsation, and the true nature of which was only disclosed by an explorative puncture into it. And lastly, could it be considered a case of malignant disease of a fibroid nature in its primary stage of development, and without presenting as yet the well-marked local and constitutional signs which may make a diagnosis certain? It is to be remembered that excessive pain and tenderness are not always necessary concomitants of malignant disease. One of the most extensive cases of osteo-sarcoma of the tibia that we have ever seen was attended with only trifling uneasiness, never sufficient to prevent rest. In this case there was no tenderness, but the nature of the pain was suspicious, a constant pricking pain. Added to this was the general character of the growth itself, and the inguinal glands were decidedly enlarged.

With an opinion inclining in this direction as to the real nature of the tumour, the hip-joint now becomes an interesting study, as its extensive anatomical lesions indicated a more or less intimate relationship with the tumour, especially as the unnatural condition of the articulation began to develop itself at a period subsequent to the appearance of the tumour.

We have already mentioned its leading peculiarities as an unnatural mobility of the joint, associated with a decidedly bony crepitus, and a very considerable shortening of the limb. A fair inference would be that the joint had suffered at some time previously from direct violence applied to it, causing perhaps fractures of the neck of the femur or of the acetabulum, complicated with a tearing of the fibrous textures of the joint and with more or less displacement of the bony fragments. Is it possible that from the activity of the inflammatory processes thus kindled up a nidus could have been formed for the development of the tumour? Such extensive lesions, had they occurred, would probably have been within the knowledge of the patient. So far from this being the case, the patient noted these changes only after the tumour had excited his attention, and they became steadily progressive as the tumour enlarged, and in his narration of the injuries really received there is nothing that implicates the integrity of the hip-joint. Again, it was scarcely possible that caries could have existed from constitutional or external causes; for there had never been pain, swelling or tenderness about the joint, and he had always preserved the most entire voluntary control over the limb; such pain as was complained of being referred to the body of the tumour. The tumour could not be regarded as an abscess connected with such caries, granting its existence, for the reasons detailed when speaking of lumbar abscess.

If his statements were to have any value in a review of his case, we were rather disposed to regard this unnatural condition as resulting from the irritation occasioned by the attachment of the morbid mass to the joint itself, or in its immediate neighborhood, and thus leading to a progressive absorption of the bone and cartilage which enters into its formation. At all events, from some cause or other, the acetabulum had suffered severely, and it is only by granting these extensive changes that the extraordinary freedom of motion and grating of bone in the joint could be accounted for.

The peculiarities of this case attracted considerable attention from the profession in this city, and we are not aware that any unlimited diagnosis was ventured concerning it. It was generally considered to hold an anomalous position in the class of affections the surgeon is called upon to treat.

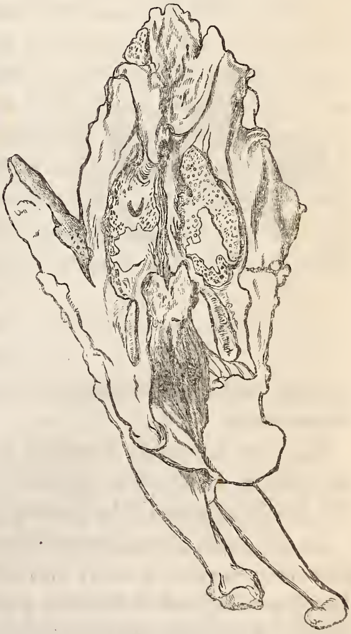
*Operation.—March* 21. Having determined to extirpate the tumour, and having previously stated to the patient the dangers to be apprehended from an operation, which I conceived if the disease was of a malignant nature might end in an exarticulation of the limb, and to the performance of which he gave his entire consent, he was placed under the influence of sulphuric ether. The thigh being placed in a position to relax the muscles, a longitudinal incision was made downward through the integument from a little above the anterior superior spine of the ilium, to the lower third of the thigh. Just above the insertion of the tensor vaginæ femoris a second incision was made intersecting the former at right angles, and the flaps of skin then lifted up so as to expose freely the inferior portion of the tumour. It was found to consist of a fibrous and cartilaginous texture, with an extensive deposit of bone within it, which appeared to be articulated with the more deeply seated portion. Superiorly, the tumour presented in the interval between the tensor of the fascia and the m. sartorius, its base being packed as it were against the crest of the ilium. The bulk of the tumour was located in the m. rectus, and muscular fibres radiated from all portions of it. After enucleating the tumour by dissection in order to reach its attachment, it was necessary to divide partially the tendons of all these muscles. The anterior portion of the capsular ligament was found completely involved in the diseased mass, and a pedunculated bony connection existed at the margin of the acetabulum, external to the short head of the m. rectus, and which was separated with some difficulty. The cavity of the joint presented a remarkable condition. The acetabulum was very much enlarged, and rather flattened by the absorption of old and the deposit of new bone. The round ligament had disappeared. The head of the femur was rough and flattened, and not a trace remained of the articulating cartilages. On dividing the bony attachment above referred to there was an escape of what appeared to be synovial fluid, perhaps ℥ss in amount, and of a healthy appearance; but not a trace of synovial fluid or pus existed in the cavity of the joint. From its pathological condition we might justly have expected an abundance of the latter; but the opposite character rather existed—a peculiar *dryness* of the articulation which we are at a loss to account for.

There was not much hemorrhage during the dissection. Two large branches of the profunda femoris directly supplying the tumour required ligature; otherwise a few superficial vessels only.

Doubts still existing as to the malignancy of the tumour, and as the wound, although severe, appeared clean, with no traces of the tumour remaining, and as it was thought, notwithstanding the cavity of the joint had necessarily been opened into, that its altered relations would protect it from the severe results usually to be apprehended from wounds of healthy articulations, it was deemed expedient, on consultation, to attempt to preserve the limb. The edges of the wound were brought together with sutures, cold-water dressings applied, and stimulants allowed according to the will of the patient.

*Dissection of the Tumour.*—The tumour was seven inches in length, of a lobulated form, gradually tapering towards a slender bifurcated extremity; its surface was very irregular, and marked with the attachment of muscular fibre, which soon became lost in the cartilaginous matrix of the tumour. There were also radiating patches of condensed fibrous substance stretching out into the surrounding muscle. There was no cyst-wall or a semblance of the partially distinct envelop formed of the hypertrophied areolar tissue often observed partly or entirely surrounding fibro-plastic tumours. It was composed of distinct masses of bone connected with each other and surrounded by condensed tissue like fibro-cartilage. They appeared to result from special centres of ossification, which would have eventually coalesced into a solid tumour.

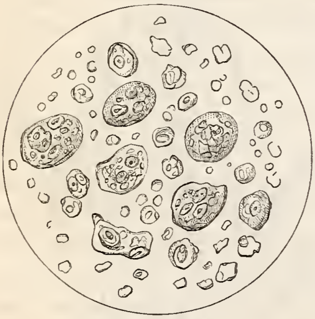
Fig. 1.



As it was, the union being incomplete between the separate pieces permitted a latitude of motion in them to such an extent as to convey the idea of a movable tumour in the examination previous to the dissection. The largest of the fragments was five inches in length by two in breadth, somewhat resembling a long bone in appearance, with an extremely dense exterior, and with its central medullary cavity, although very irregularly developed. The smaller pieces could be easily cut with a knife and had more the appearance of the cancellated texture of bone. The fibrous matrix in which they were formed was quite firm in texture, and distributed through it were numerous cells varying from the size of a bean downward, containing a peculiar curdy substance of a yellowish colour. These cells were also quite abundant in the parts ossified, and had firm walls of a fibrous character. Bands of white lustrous fibre traversed the smaller ossified pieces without preserving any uniform direction. The portion of the tumour covering in the hip-joint had a rough villous surface; no trace of the synovial membrane could be found. The tumour was very vascular, the more solid parts being highly injected with bloodvessels resembling bone in an inflamed state.

The microscopical appearances of the tumour are worth noting. Its matrix was composed for the most part of condensed filamentous tissue. The wavy fibres of a pearly lustre were clearly brought out in any section of what appeared to constitute the cartilaginous portion of the growth. The indurated nodules cropping out from the surface of the growth and imbedded in the surrounding muscle, evidently nuclei for the additional deposit of bone as the tumour increased in size, were purely made up of this texture. Interspersed among the meshes of the filaments was found an amorphous granular matter, an abundance of oil globules, and cells containing nuclei and nucleoli such as are represented in Fig. 2. The ossified portions had the structure of true bone. The corpuscles of Purkinje with the radiating canaliculi were beautifully distinct. An abundance of nutritive canals (corresponding to the canals of Haver) were observed, although irregularly distributed and soon lost in the surrounding fibrous tissue.

Fig. 2.



The cysts previously described, found in the bone and the less solid parts of the tumour, contained an abundance of oil globules, granular matter, and the cell growth as seen in the accompanying drawing.

As the result of our observations in this case we suspect that the areolar or filamentous texture is really that which in its modifications from a healthy condition, growing out of obscure, perhaps impenetrable causes, gives origin and material of progress, more frequently than is ordinarily supposed, to a large class of factitious growths which are engrafted on the human body. One of the most rudimentary forms of abnormal ossific structure is found in the subserous filamentous texture of arteries, where we have under the microscope simply an amorphous granular deposit. There is still a tendency towards a structure exhibited here, as the plates are arranged with a tolerably uniform thickness, preserving the calibre of the vessel. The modelling process by which this is accomplished belongs to the subserous tissue, and at all events shows an effort at arrangement not apparent in the masses of granular calcareous particles, loosely connected by fibrin, much resembling a precipitate from the blood, as we have seen in one instance, nearly obliterating the cavity of the aorta, the walls of which were almost completely transformed into a bony tube. In this case the ossific plates were found very numerously distributed in the coats of the larger veins.

That the filamentous tissue may possibly form the nidus for the extension of morbid growths, when their nutrition becomes active, derives some support from the wide-spread anatomical relations of this texture to the organic fabric.

The curious attachment of muscular fibre to the surface of these tumours is thus easily accounted for. As the tumour grows, the sheaths of successive fasciculi being gradually incorporated with it, making for them new and independent attachments, we believe the muscular fibre to be gradually lost by the absorption of its elements, and not transformed into the proper texture of the tumour. In the case of osteo-sarcoma of the tibia, already cited, the principal mass of the disease posteriorly corresponded directly in outline with the m. popliteus, a few shreds of this muscle only remaining superficially.

The various forms of abnormal structure of which the etiology is so little understood, may well be regarded as the genuine parasites of the human body, corresponding approximatively to the fungi of the vegetable world. All pathologists agree in considering them as textures of a low vital type, and were it reasonable to draw conclusions from a single case, we should assert that the more primitive structures in the animal body afforded the most natural habitat for their development, as the lowest forms of vegetation, to pursue our analogy, connect themselves with the least vitalized portion, as the bark of the higher orders of plants.

These reflections are simply suggestive, to provoke inquiry, rather than to intrude on the profession dogmatical statements.

In the evening after the operation, reaction was well established, and the patient made no complaint. Pulse 100, full and soft. Opiates were allowed to promote rest.

22*d.* The patient rested tolerably well during the night. The tongue continued moist, although there was some thirst. Pulse 110. Some pain in the wound, not severe enough to occasion distress, with slight tumefaction.

Strongly nutritive drinks allowed; anodynes continued, with moderate use of stimulants.

23*d.* Reported himself as more comfortable. Slept well during the last half of the night. The bowels have not been moved since the operation. Pulse

116, rather sharp. The thigh is somewhat swollen; the margins of the wound reddened, with a considerable discharge of sanies.

A full nutritive diet ordered. Castor oil to act on the bowels.

24*th.* Irritative fever, with marked constitutional prostration. Two dejections from midday of yesterday. Sharp pains complained of through the lower portion of the abdomen. Wound as previously described. Pulse 127, sharp.

Stimulants and opiates continued, with warm fomentations over the abdomen, and a light yeast poultice to envelop the thigh.

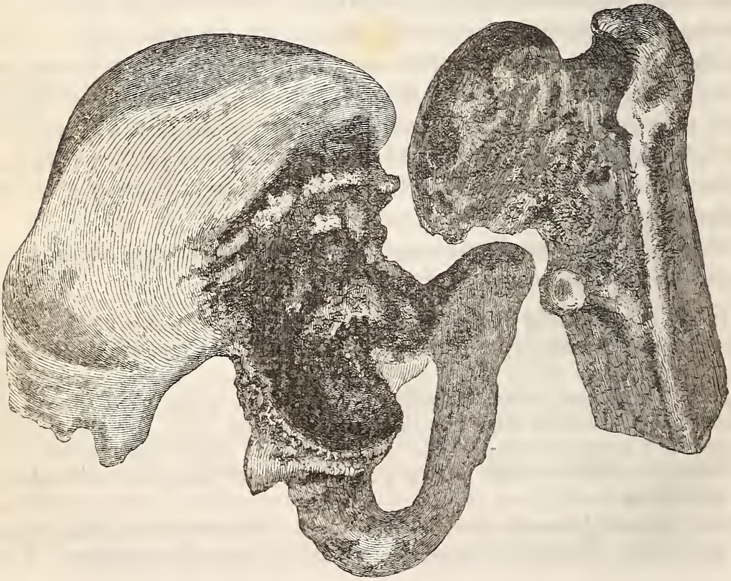
7 P. M. The patient was suffering the most agonizing pains, with a sense of tightness and constriction through the lower portion of the abdomen. No additional tumefaction or irritability about the wound. Discharge scanty, of a sero-purulent character. A greenish discoloration over the m. glutei observed stretching across the lumbar region of the back. The pulse can scarcely be counted.

25*th.* Well-marked gangrene established in the parts mentioned in the previous report. The patient finally sank after extreme exhaustion.

*Autopsy* 12 *hours after death.*—Slight cadaveric rigidity. The discoloration of the integument was confined to the lower back and buttocks, without any tendency to a line of demarcation, and not involving either the wound or the thigh. The muscular textures were generally much softened, including the muscles of the thigh, otherwise but little change had taken place in the track of the wound. About ℥ij of sanious pus, without marked fetor, was found in the cavity of the joint. No traces of excited action existed in the joint itself, or textures immediately adjoining. No traces of inflammation of either the veins or arteries could be discovered. Viscera of the chest and abdomen perfectly healthy.

We have added a drawing of the pelvis and head of the femur, showing the condition of the bone entering into the hip articulation (see Fig. 3). The gross

Fig. 3.



appearances will immediately strike one as similar to the changes often observed in coxalgia, and were accomplished by the progressive absorption of old bone and the deposit of new ossific material. There were no evidences of caries or necrosis. Absorption was more active than the reparative process, as the new deposits seen about the margin of the acetabulum and the head of the femur were of a light porous character, it being possible to compress many of the little nodules between the thumb and forefinger. External to the acetabulum, although the form of the pelvis had been preserved, the bone had become so thinned and porous by absorption, as to admit rays of light to readily pass through the minute intervals from one surface to the other. The neck of the femur appears, at first sight, shortened. On comparison with its fellow this was found not to be the case. The head of the femur was flattened and fissured, its margins irregular and expanded by the deposition of new material.

The cause of gangrene in this case was a little obscure. It will be observed that it did not display itself in the parts where we should have more naturally expected, either in the wound itself or the thigh, but in the back and gluteal region. It could not have resulted from loss of blood, for the hemorrhage during the operation was trifling, the two large branches of the profunda being ligated as soon as divided.

It is more probable that death resulted from the prostration of the nervous centres connected with the operation, although this is difficult to concede, for the patient was remarkably comfortable, considering the severity of the case, up to the day preceding his death.

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## ART. VIII.—*Cupping the Interior of the Uterus.* By HORATIO R. STORER, M.D. (Read before the Boston Society for Medical Observation, Oct. 19, 1857.)

CASE I.—Catharine ——, of Roxbury, aged thirty, and unmarried, applied for treatment at the Eustis Street Dispensary, February 2, 1857.

Catamenia reported as entirely absent for seventeen years; having commenced at twelve, continued regular for one year, and then on her taking cold, permanently ceased. A general leprous eruption, which immediately followed this suppression, has been constantly present since, disfiguring the patient and otherwise causing her much discomfort.

Somewhat dyspeptic and anæmic; costiveness; addicted to headache, flatulence, nausea. Old ulceration of tonsils. Vaginal leucorrhœa.

She was at first mainly treated for the disease of the skin. The diet was carefully regulated and the bowels kept moderately open. Iodide of sulphur was used locally, Fowler's solution by mouth till specific effect; in vain.

The protoiodide of mercury was then given, though all syphilitic taint had been denied. It was pushed till great irritability of the bowels was produced, though it had been combined with an opiate; patient not improved. The mercurial was subsequently resumed and continued till April 1, when the gums were sore. It was then stopped, and the arsenic again commenced.

In the mean time, the catamenial disturbance had not been lost sight of. There was never present any decided menstrual molimen; it was therefore impossible, save empirically, to time the attempts at assisting nature. There was, it is true, pain in the head and back, but irregular and uncertain, while the leucorrhœa presented no monthly or periodic increase.

On March 14, alteratives and tonics having been given for six weeks, with aloetic purgatives, hot hip-baths, &c. &c., from time to time, without benefit either to skin or uterine system, a vaginal examination was made. The abdomen had been previously ascertained to be free from enlargement or tenderness. The uterus was found depressed and slightly retroverted; its cervix elongated, but of small diameter; os almost impervious. The sound entered with difficulty about two inches.

Sinapisms to the breasts were now ordered, in addition to and with the emmenagogues already employed.

*March* 19. No effect produced, other than that patient has so well tested the mustard as to have blistered both breasts. These abrasions were treated by collodion.

*April* 1. A succession of flexible metallic bougies, an eighth to a fourth of an inch in diameter, were passed through the cervix uteri.

4*th.* A galvanic stem-pessary, an eighth of an inch in diameter, introduced into the cavity of the uterus.

12*th.* Pessary still worn. Patient cupped at and below sacrum.

*May* 8. No effect having been produced, the intra-uterine air-pump hereafter to be described was applied, and by it ℥ss of blood drawn from the interior of the uterus. This was early in the morning; the discharge continued throughout that day and night.

*June* 6. Patient reports herself as in all respects better. Air-pump again applied, and flow again produced; this time more readily than at first.

When last seen, early in July, the patient had still further improved in general health and spirits, while her skin had begun to assume a more natural hue and feel.

In this woman the cutaneous affection not merely accompanied, but was apparently consequent upon the suppression of the catamenia. Such being the case, its obstinacy, equal in intensity and duration to that of the original disturbance, is explained.

In the treatment of the case, from the outset, I was aided by my friend Dr. Hayward, of Roxbury.

Case II.—Margaret ——, aged twenty-five, from Winchester, entered the Lying-in Hospital, under my charge, October 10, 1856.

Patient unmarried. Catamenia never appeared till her twenty-first year; discharge always very scanty, ceasing and reappearing at intervals during one or two days, and always attended with excessive local pain, which continued throughout the period. Recurrence of menses irregular, frequently passing five or six weeks, as is at present the case.

Dyspeptic, anæmic, hysterical; for which general treatment, hydrocyanic acid, cannabis indica, &c. &c.

Upon examination, some tenderness of abdomen, which was retracted. To the touch, the os seemed almost impervious; cervix somewhat elongated;

uterus depressed. For this a ring pessary had formerly been introduced, with some relief. Ordered aloes, hot hip-bath, sinapisms to breasts.

*October* 12. No appearance of menses. Uterine sound introduced two inches, and followed by smallest sized galvanic stem-pessary.

The next morning the menstrual discharge was established, not very abundantly, but comparatively more so than ever before, and with very much less pain. It continued for two days.

22*d*. To-day a series of four metallic bougies passed; all, even the largest, with ease.

*November* 15. Bougies repeated. Yesterday and the day previous, galvanic pessary. To-day menstruates as before, and almost without pain.

The flow continued two days; and then, on November 17, patient discharged from the hospital, much relieved.

In the spring of the present year, I was again consulted by this patient The improvement above noted had continued for some time, and had then yielded to a recurrence of all the former distress. I therefore applied the air-pump, the menses being overdue, and produced a free sanguineous discharge. This was several times repeated, at the proper intervals, in July for the last time, always with relief to the usual symptoms, and apparently with permanent benefit to the general health.

The cases reported were instances of amenorrhœa—the one partial, the other total; and in both organic, for in both the uterus was found undersized and undeveloped. In neither, however, was there any obstacle to the flow had free excretion from the uterine tissue existed, for though the os in both cases was extremely small, yet in neither did it offer any decided resistance to the passage of bougie or uterine sound. In one the catamenia had appeared very early, in the other very late. In one the suppression had been almost immediate and total; in the other incomplete, but constant and accompanied by intense dysmenorrhœa, apparently not obstructive as ordinarily defined, but congestive in its character. They may each require an extension of the treatment, but its immediate and decided effect for good, both on the uterine system and general health, give hope that the improvement may prove permanent.

It will be noticed that the remedies most frequent or most powerful had been faithfully but vainly tried. The fact that I avoided others that might be mentioned, ergot, galvanism, vaginal leeching, and the like, was in part owing to experience of their inefficacy, and in part to desire for testing the mode of treatment now described.

The operation, bold as it is novel, of producing hemorrhage from the uterus by actually cupping its internal walls, was conceived and apparently first practised by Prof. Simpson, of Edinburgh, and I am not aware that it has as yet, by himself or by another, been made public or described. It seems philosophically based, and the only questions to be settled are those of its safety and success. To these, answers in part at least are found in the cases now reported, whose progress, communicated to them at the time, has already afforded matter of interest to several members of the profession.

The instrument used, identical save in coupling, with one made for me at

Edinburgh, in 1854, and now also exhibited, is from the hands of Messrs. Codman & Co., of Tremont Street.

Its construction is sufficiently simple. An air-pump, small but powerful, and a perforated tube, itself of sufficient calibre to contain several drachms of blood, yet not too large to enter the os and cervix uteri; its orifices of a size to escape easy clogging with mucus or clots of blood, and yet too small for extensive laceration or hernia of the mucous coat, and its axis curved to correspond with those of the uterus and vagina. Its passing to a sufficient depth within the uterine cavity is insured, its entering too far is prevented, by a ring of gutta percha, bevelled above for more perfect closure of the os, and adaptable to any case by remoulding. The exact position of this ring is to be determined by previous careful use of the uterine sound. Like that of the intra-uterine pessary, the point of the stem should almost, but not quite, reach the fundus uteri. By this precaution danger is avoided, and a much more thorough effect rendered probable.

To the manner of coupling I am inclined to attach some importance. In the Edinburgh instrument, the pump is screwed to the upper portion of the lower tube, while in the other I have joined them by caoutchouc pipe. The liability of a screw-thread to become worn, and the less chance of violence in case the piston should play stiffly, if the coupling, while perfectly tight and fitting, were yet elastic and flexible, occasioned this modification.

I have used the cup in other cases than those reported, in every instance with the effect of inducing the sanguineous discharge, and I have never seen from it any permanently disagreeable result. Its power upon the nervous system is, however, at times so decided that its use should be with care. In one case, where the introduction of the instrument had been painless, the first play of the piston occasioned instant and alarmingly profound syncope.

To the microscopist, this instrument might frequently prove of use, by affording an easy means of procuring healthy or diseased secretions directly from the cavity of the uterus.

Whether in practice the cup will be found to answer any other indication than that for amenorrhœa already instanced, as for relieving ordinary congestive and inflammatory attacks, either of the uterus itself, Fallopian tubes, or ovaries, remains yet to be seen.

## ART. IX.—*Rupture of the Trachea, from a fall.* Communicated by JOHN L. ATLEE, Jr., M. D., of Lancaster, Pa.

ON the 22d of July, 1856, a boy, four years of age, the son of J. W., a resident of Lancaster, in running across the street, tripped at the curb-stone and fell, striking his neck with force against the scraper at the side of the door of his father's house. The blow caused for a few moments extreme difficulty of breathing, and I was at once sent for.

I reached the house not more than five minutes after the injury had been received, and the child was then seated upon his mother's lap, his head resting against her arm, and breathing naturally, or very nearly so; there was some blueness of the lip, but this soon passed off; on his countenance there was not much appearance of distress. Where the neck had come in violent contact with the scraper, there was not the slightest mark upon the skin. I was just about to congratulate the family upon the slightness of the injury, when the child, struggling to free himself from his mother's arms, threw himself violently backwards. He at once became enormously swollen, and in a moment was dead. The cause of the swelling was evidently the entrance of air into the cellular tissue, and it extended over the head, the neck, the trunk, and the upper extremities to the ends of the fingers. At the sternum the finger, before reaching the bone, penetrated fully an inch.

To my extreme regret, a post-mortem examination was refused. My opinion of the case was this: That when the neck had struck the scraper, the rings of the trachea had been separated from one another, but that they had remained in place until dislocated by the act of throwing the head backwards; when this occurred, the air contained in the lungs was forced violently into the cellular tissue of the body. The difficult breathing immediately after the accident, must have been caused by spasm of the glottis, produced by the direct blow, as we sometimes observe after severe blows of the fist.

In wounds of the air-passages, all works on surgery warn us against improper bandaging of the external wound, on account of the danger of emphysema, but no notice is made of an injury similar to the one I have just related, except in the work of Ryland.[1] There is also a case reported in the *Lancet* for the 6th of September, 1856, by Dr. Robertson, resident English Physician of the Baths of Wisbaden, who styles it an "unique casualty." These cases have never been published in this country, and as they are very extraordinary, and as, moreover, from the autopsies, they enable us to explain the phenomena observed in the case I report, it may be well to give them.

Ryland, at page 250, says:—

"Wounds of the larynx may prove fatal by causing emphysema of the body to such an extent as to impede respiration, but this must always be owing to a faulty or inattentive mode of dressing or bandaging the wound, or to the injudicious use of sutures. If, however, the larynx be crushed or ruptured without the skin giving way, emphysema is a certain result, and if it be not actively treated, may destroy the life of the patient. The only instance of this kind of injury that I have met with, is a case by Dr. O'Brien, in the *Edinburgh Medical and Surgical Journal*, vol. xviii.

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[1] Treatise on the Diseases and Injuries of the Larynx and Trachea, by F. Ryland, London, 1837.

"A woman was brought into the Royal Infirmary of Edinburgh, on the evening of the 23d of July, 1818. The face was tumid, lips livid, breathing very laborious and stridulous. The skin was cold, and that of the thorax, neck, face, and superior extremities, distinctly emphysematous; and the pulse was scarcely perceptible. She pointed to the throat as the chief seat of pain, and said she had been kicked under the jaw; on the lower anterior part of the neck was a bluish mark. Scarifications were made about the lower part of the neck, and restoratives and opiates were administered internally. On the following morning her breathing had become more difficult, and she expired about nine o'clock.

"*Dissection.*—The cellular substance of the neck was everywhere distended with air. On the soft parts being removed, a rupture was found through the whole depth of the thyroid and cricoid cartilages, on the left of their mesial line, and then through the right side of the first ring of the trachea. The ruptured edges of the cartilages were rather tumefied, and slightly inverted. Most of the cellular substance surrounding the larynx, pharynx, and trachea was emphysematous. The anterior mediastinum was also emphysematous. On opening the heart, the blood was found not coagulable, and quite frothy from the admixture of air, and that in the aorta and vena cava abdominalis was in the same state."

In the case reported by Dr. Robertson, in the *Lancet*, and which is an abstract of the report of Dr. Berger, the Surgeon-General, the injury, as will be seen, did not affect the larynx at all.

"Cannonier B——, of the Artillery of the Prussian Guard, was kicked by a horse a little below the lower jaw, while engaged in washing his hind hoof. A small unimportant skin wound exhibited itself at the edge of the jaw, and some blood, but not much, flowed from the mouth. The neck, however, rapidly swelled to an extent sufficient to materially impede respiration. The patient complained only of a peculiar sensation of weight at the epigastrium, and stated that he felt as if blood had collected in his windpipe, and prevented his breathing freely. There was no fracture or injury to be discovered in the larynx. The patient was at once bled; generally from the arm, and locally by leeches, without the slightest effect upon the orthopnœa. The latter symptom continued to increase rapidly until so fearful an emphysema had established itself that the chest, neck, and face of the man were swollen to a frightful extent; and in this state, suffering great agony, he died within an hour and a half of the receipt of the injury.

"The *post-mortem* examination discovered a complete rupture of the trachea from the larynx, the latter being uninjured. The separation commenced at the left side of the cricoid cartilage, proceeding to the right as far as the middle of the posterior edge, so that a third part only of the union of the trachea and larynx remained intact. Several of the cartilaginous rings and ligaments of the trachea were ruptured, and it was found filled with coagulated blood. The thyroid, cricoid, and arytenoid cartilages were quite uninjured. The heart was in a normal condition; the lungs were congested, and of an unusually dark colour."

In connection with the above mentioned cases of general emphysema from external injury, it may be interesting to know that in the *Gazette Médicale* for 1840, p. 698, a case is recorded in which it resulted from the perforation, by ulceration, of the right ventricle of the larynx, a little below the vocal chord. The patient was a young girl, fifteen years of age, who had been attacked with ulcerative pharyngitis and laryngitis.

In cases of this kind, when their true nature is at once ascertained, it would certainly be advisable to resort immediately to tracheotomy. It is true that the ultimate cure of the patient is very doubtful, but it would afford a reasonable chance of at least prolonging life.

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## ART. X.—*Case of Fallopian Pregnancy resulting in Rupture of the Cyst and terminating in Death.* Reported by ROBERT P. HARRIS, M. D., Philadelphia. [Read before the Philadelphia Pathological Society Nov. 25th, 1857.]

MRS. S., the subject of the following report and observations, a lady of medium height, somewhat full habit, 27 years of age, and the mother of an infant a year old, ate her breakfast on the morning of the 24th of October, 1857, apparently in perfect health, and between nine and ten o'clock was suddenly seized with excruciating pain in the lower part of the abdomen, followed almost immediately by a feeling of faintness. Her pulse became very rapid and feeble, extremities cold, and surface of the body very pale, as though exhaustion was being produced by internal hemorrhage. Stimulants, such as wine whey, brandy and water, milk punch, and carbonate of ammonia were freely administered, and cataplasms of mustard and ginger, together with frictions of Cayenne pepper and whiskey applied externally, but to no purpose. The pain, which was at first very severe, soon diminished, and finally ceased; she gradually became more and more feeble, no pulsation of the arteries at the wrist was perceptible, and the whole surface of the body became cold, so that in a few hours from the commencement of the attack all hope of recovery was abandoned. She remained in a moribund condition, with little apparent change, until, from a gradual loss of vital power, she ceased to breathe about seven o'clock on the following morning, twenty-one hours after the commencement of the attack.

The next great point of interest in the case was to find out the cause of death, for although a correct diagnosis was not impossible, yet its uncertainty demanded that, for the benefit of science, it should be verified by the only sure test in such cases, *i. e.* a post-mortem examination of the body. By a refusal to grant a certificate of death to the relatives of the deceased because of incompetency to state positively the cause of death, permission, after some hesitation, was obtained to make an autopsy, and twenty-nine hours after death we entered upon the examination. Upon uncovering the body, the abdomen was found much distended and tympanitic over its whole extent, and, incising the skin and soft parts down to the linea alba, a thickness of adipose deposit, varying from an inch to an inch and a half, proved the full state of health of the patient at the onset of her disease. Further dissection showed that the intestines, both large and small, were very much inflated, and that the omentum was wrinkled and drawn up to the right upper portion of the umbilical region. Extending the vertical incision down to the pubis, we were arrested in our examination by the escape of a small quantity of serous fluid, and upon drawing the intestines upward from the brim of the pelvis, we found that the cavity of the pelvis, as well as the lower and back part of the abdominal cavity, was filled with black blood in a partly fluid, partly coagulated state. After this was removed by means of a sponge, to the amount of perhaps half a gallon, a small abnormal growth in the course of the right Fallopian tube arrested our attention, and caused us to dissect out and carefully remove the uterus with its appendages.

The uterus proved to be scarcely if at all enlarged beyond the size we usually find it in healthy women who have borne children. Its cavity contained a little mucus slightly tinged with blood, but no trace of a membrana decidua; the ovaries were healthy, of normal size, but very pale in colour, from their anæmic state, and the left Fallopian tube presented nothing unusual; but in the right one, immediately above the ovary, was a tumour of an oval form, slightly flattened antero-posteriorly, about an inch and a quarter long, an inch in its vertical diameter, and of a reddish-blue colour. Upon close examination, a small opening of a little more than a line in diameter was detected at its upper surface, perforating the edge of the broad ligament. This hole communicated with the peripheral portion of the body, but not with its interior cavity. An incision made through the cortical portion so as to divide the body to its centre, revealed a cavity containing a small diaphanous sac, within which was a human embryo of a pure white colour, and half an inch in length, looking a good deal like a common maggot.

Here, then, was clearly revealed the cause of death, and the supposition with regard to the nature of the disease proved to be correct. An ovum had become arrested in the Fallopian tube in its progress from the ovary to the uterus, had become partly developed in its abnormal situation, and when it had attained the age of three or four weeks had bursted, thereby making a direct communication between its bloodvessels and the cavity of the abdomen, and the patient had died of internal hemorrhage. This Fallopian or tubal cyst and the diameter of the perforation had in all probability been larger at the time that rupture took place than they were found to be when the autopsy was made, as they would both naturally diminish somewhat after the force of the discharging current of blood began to decrease. This would account for the sudden prostration that took place at the commencement of the hemorrhage, as well as for the length of time that the patient lived after she appeared to be in a dying condition. The accident was no doubt in a great measure determined at the time it did take place, by the condition of the patient, who was menstruating. The increased flow of blood to the uterine organs probably contributed to produce the rupture of the cyst, which appeared to have given way very much after the manner of an aneurismal sac. The chief peculiarity of the case was the very early age in the development of the ovum at which the rupture took place, a shorter time after conception than any of the cases of similar accident that I have met with in works upon extra-uterine pregnancy, or in the medical journals.

*Remarks.*—In view of the importance of this interesting case, it will be perhaps profitable to examine more particularly into the nature of Fallopian pregnancies, the most common to be met with of all the forms of extra-uterine fœtation. Embryologists whose researches have been most recently brought before the eye of the profession divide the forms of extra-uterine pregnancy into ten separate and distinct varieties, of which six are more or less connected with the Fallopian tube. These have been denominated sim ple Fallopian or tubal; tubo-ovarian; tubo-abdominal; utero-tubal; tubo-uterine-interstitial, and utero-tubo-abdominal—names which in a very simple manner convey to the mind a knowledge of the situations occupied by the ovum.

*Causes of Fallopian Pregnancy.*—When we look into the nature of conception, and the structure and uses of the Fallopian tube, we are not surprised that cases of tubal pregnancy are met with, but are amazed that they do not more frequently present themselves to our observation. M. Coste, of Paris, who has for the last twenty-six years been investigating the nature of conception and fœtal development under the most favourable circumstances; M. Velpeau, and other celebrated embryologists, have not yet been able positively to determine the manner in which the ovule is carried from the ovary through the oviduct to the uterus. The spermatic fluid of the male, it is now generally believed, passes along the Fallopian tube to the ovary and there fecundates the matured Graafian vesicle, which, bursting through the parenchyma of the ovarium, is grasped by the funnel-shaped extremity of the tube, to be carried into the uterus for its future development; but how it is so propelled, whether by a movement of the epithelial ciliæ of the mucous membrane lining the oviduct, by a consecutive annular dilatation and contraction of the walls of the tube, or by a combination of both species of movement, it is impossible fully to determine, though from the fact of the existence of longitudinal and circular muscular fibres in the walls of the tube it is most probable that progressive motion is given by them to the ovule, somewhat after the manner in which deglutition is effected in the œsophagus of a serpent. The canal is much too small in its natural condition to admit of the passage of the ovule without considerable dilatation, and, judging from the analogy which exists between the structure of the Fallopian tube and other tubular organs of our bodies whose propulsive power is much more readily and certainly determined, we have great reason for supposing that it is by a species of vermicular or peristaltic action that the Fallopian tube is enabled to perform one of its most important functions. It may be very readily conceived that the physiological action of the tube might by some disturbing cause of so slight a nature as not to be appreciable, be so deranged that an arrest in the progress of the fecundated ovule towards the cavity of the womb should take place, and the ovule be developed at the point where it ceased to advance. In some of the cases that have been reported by medical observers, injuries and severe mental disturbances were assigned as causes for this cessation of the conducting action of the tube; but in by far the greater number of those which have been published no definite reason could be given why the ovule should not have continued in its onward movement until it reached the uterine cavity. In many of the autopsies that have taken place in cases where death has resulted from the bursting of a tubal fecundated cyst, the ovum had not advanced beyond the enlarged extremity or infundibulum of the oviduct, constituting the tubo-ovarian variety of extra-uterine pregnancy, in which situation the ovule is probably arrested, from its being too largely developed previous to its passage into the funnel-shaped portion of the tube, to admit of its being carried through the more contracted section beyond.

It is to be presumed that as there is no vascular sustenance afforded to the ovule until adhesion takes place between it and some contiguous tissue, that it does not increase in size in its passage from the ovarium to the uterus when no impediment to its course exists; which will account in a great measure for the infrequency of tubal pregnancies as compared with uterine. Simple tubal pregnancy is more common than any of the other six varieties, from the fact that as there is a long and narrow canal to be passed through, the ovule is here most likely to meet with impediments to its progress, or to form adhesions with the surrounding tissues; and cases are on record of the development of ova at almost any point between the infundibular portion and the uterine extremity of the tube, even in that portion of the canal which lies between the external and internal surfaces of the womb itself, where the passage is larger than the central section of the conduit.

*Diagnosis.*—The difficulty of determining the presence of abnormal growths connected with the uterine appendages is well known to be very great; still more does it approach to an impossibility to define their nature when the fact of their existence is beyond dispute; and this is particularly the case in the early stage of their development, whilst they are but yet small. Some of the varieties of extra-uterine pregnancy can be distinguished with sufficient certainty in the latter months of gestation to warrant a resort to an operation for the purpose of removing the fœtus and thus favouring the cure of the patient. This is particularly the case with that form denominated sub-peritoneo-pelvic, where the ovum is developed between the peritoneal laminæ of the broad ligament, and which, as it increases in size, presents one extremity (generally that containing the head of the fœtus) low down in the pelvis alongside of the vagina, where it may be felt and recognized: but in most tubal pregnancies the position of the sac not only renders it very difficult of recognition by palpation, percussion, or an examination per vaginam or rectum, but makes it almost impossible by such means to define positively to which of the varieties the disease properly belongs. When the fœtus is sufficiently developed to afford recognizable cardiac sounds, the chances for making a diagnosis as to the true nature of the disease are much increased; but we must not forget that here a mistake may be, as it has been made, for cases are upon record where intra-uterine fœtation was mistaken for preternatural, and the sound of the arterial thrill in the aorta for that of the heart of a fœtus.

In those cases where a physician is called in to give his opinion as to the nature of the complaint, gestation is almost always advanced beyond the period when the patient this article refers to died, for in the first two or three months, as a general rule, the attention of the female is not directed to her condition by any symptoms sufficiently alarming to cause her to seek advice, and she attributes her feelings to a natural condition consequent upon conception. If menstruation continues, which it does not do in the generality of cases, it will sometimes cause an earlier attention than otherwise; but not always so, as in many cases of normal gestation it is well known that women continue to be regular for a few months after conception has taken place. Ovarian pregnancy is much more apt to attract early attention than Fallopian, in consequence of the greater sensitiveness of the organ involved. Generally the first symptoms of an alarming kind which are felt are certain anomalous pains and spasms of the abdomen, accompanied by fainting turns and alarming prostration. In tubal and ovarian pregnancies these pains are seated low down in the abdominal cavity, but in abdominal fœtation they are not much confined to one situation, but extend more or less over the whole abdomen, which is very tender to the pressure of the hand. These symptoms may be the immediate precursor of rupture of the sac, or they may disappear and return from time to time until either the fœtus dies, the sac bursts, or some other of the changes to be hereafter mentioned take place in the sac or its contents.

If the pains experienced are those of actual labour and the period of gestation be far advanced, there will be but little difficulty in telling whether the fœtus is within or without the uterus. The abdomen will in the latter event be found of an irregular conformation and the fœtus more to one side than ordinary. If the bladder be emptied by a catheter it will not be very difficult to feel the fundus of the womb just above the symphysis pubis, as in cases of normal parturition after the expulsion of the fœtus, and when the membrana decidua (if there be one) is expelled, to establish the non-existence of a fœtus in the uterine cavity by the introduction of the index finger.

The frequency of the existence of tubal pregnancy as compared with the other forms of extra-uterine fœtation, makes it probable, when we meet with a case of preternatural gestation, that it belongs to the former class. The collection of cases made by M. Daynac, of Paris, and published in 1825, shows that in one hundred and fifty cases of extra-uterine pregnancy, about ninety, or three-fifths, belong to one or other of the tubal varieties; thirty, or one-fifth, to the ovarian, and the remainder to the abdominal, &c. Some writers have stated the proportion of Fallopian pregnancies to be still greater, as M. Czihak, who says that they are as three to one. In many cases of simple Fallopian pregnancy during the early months of gestation, the uterus is little if at all augmented in size; but in some, as the utero-tubal and utero-tubo-abdominal varieties, where the womb makes a portion of the gestative sac, it becomes considerably enlarged, thus deceiving the physician as to the nature of the pregnancy when examined by the touch. In the latter months of gestation the uterus is enlarged in all the varieties of extra-uterine pregnancy, though much more in those immediately connected with it than those entirely separated from it. In order fully to comprehend the difficulties which stand in the way of making an accurate and reliable diagnosis in extra-uterine pregnancies it is only necessary to refer to the reports of cases to be met with in medical books and periodicals and see the mistakes that have been made by men of undoubted skill. When a small ovum has bursted there is often less difficulty in determining the nature of the lesion than there is when the sac is whole, and of much larger size than the cyst found in the case of Mrs. S.; for although in the former case auscultation, palpation, and the touch are capable of revealing nothing, yet the alarming symptoms present indicate with some degree of probability the nature of the malady.

In determining the nature of the disease which had caused the death of the patient whose case has been recorded in these lines, I reasoned, before commencing the examination of the body, in this way: Here is a lady of full habit whose health has for some months been excellent, and the age of whose infant makes it highly probable that she may have conceived. The symptoms of her malady evidently denote that she died from the effects of internal hemorrhage, and the manner of the commencement of the attack, that the blood escaped into the cavity of the abdomen. Now where did this blood come from? The patient, before her last accouchement and for some time subsequently was troubled with diarrhœa: might she not have had perforation of the intestines? The physical condition of the woman, and her excellent health for some months past show almost to a certainty that no ulceration sufficient to have produced such an event could have existed in the alimentary canal. Was she pregnant? She thought not, because she was menstruating when the attack came on: but this does not prove the non-existence of extra-uterine pregnancy, as many cases which have been recorded show that the menstrual function is frequently not affected by preternatural pregnancies. The os uteri when examined by the touch soon after the commencement of the attack, appeared to be very sensitive, which is often the case in disease of the uterine appendages, but it is no positive indication of the existence of any lesion, because menstruation of itself sometimes increases the nervous sensibility of the uterus. The nature of the pain experienced, its seat at the lower part of the abdomen, and the evidence of a sudden and continued discharge of blood, commencing directly after the pain was first felt, so exactly corresponded with the history of many recorded cases of rupture of extra-uterine cysts that I was led to believe that a post-mortem examination would prove that I was correct in pronouncing the cause of death to have been the "rupture of an extra-uterine fecundated cyst." Having determined in my mind the nature of the disease, it was of little practical moment where the cyst was situated in a case of this character; from the frequency of Fallopian pregnancies over the other varieties of preternatural fœtation, it would have been natural to have supposed that the seat of the cyst would be found to be some portion of the oviduct.

*Prognosis.*—From the nature of Fallopian pregnancies it will readily be conceived that the prognosis is exceedingly unfavourable, an opinion which will be fully confirmed by a reference to reports of published cases to be found in the collections of Dezeimeris, Petsch, Moreau, Daynac and others. Although Fallopian gestation is not in all its varieties necessarily fatal, yet the great majority of cases ultimately sooner or later perish, and most of these from internal hemorrhage. The length of time that elapses between conception and a fatal termination varies very much in different subjects, being determined in some cases by accidental causes, as blows, falls, &c., and in others by distension and thinning of the walls of the sac; by mechanical pressure; uterine gestation; hyperæmia of the uterine vessels; conversion of the cyst into a dropsical sac; suppuration, &c. Most of the cases of rupture terminate before the fifth month, but some do not until the full period of gestation is completed. The bursting of the tube is not in all cases followed immediately by death, for in some the ovule escapes entire, falls into the abdominal cavity, and there forms adhesions, becoming further developed as an abdominal pregnancy; in others the placenta remains attached within the tube, and the membranous bag containing the fœtus escapes to become thereafter developed exterior to the tube in the abdominal cavity, constituting a tubo-abdominal pregnancy. In the first case a cure may possibly take place by ulceration, so as to discharge the fœtus into the rectum or vagina, or be effected artificially by the vaginal section; in the latter, gastrotomy might possibly be performed with benefit, but I am not aware of its ever having yet been attended with other than fatal results so far as the effect upon the mother is concerned, owing to the difficulty of removing the placenta without fatal consequences, the impossibility of letting it remain and still saving the patient, and the danger of peritonitis. A very interesting example of abdominal pregnancy in which gastrotomy was performed may be found recorded in the *Philadelphia Journal of the Medical and Physical Sciences*, vol. i., New Series, 1825, p. 129. The patient died of peritonitis upon the fifth day after the operation.

Of the six varieties of extra-uterine fœtation in which the Fallopian tube forms the whole or contributes to form a part of the gestating sac, the utero-tubal is the most favourable. In this form it is quite possible that the efforts of nature alone, or if not, with the assistance of the hand of an accoucheur, may suffice to deliver the woman through the natural outlet, for a proof of which I refer you to the case reported by Richter and reprinted in Moreau's work upon extra-uterine pregnancies,[1] and to that reported by M. de Ritzen, reprinted in the *Medical Examiner* (Philadelphia) of 1841, p. 638. The favourable results of these two cases must not always or even generally be expected in utero-tubal pregnancies, for it is this variety which by consecutive action forms the utero-tubo-abdominal, perhaps of all the forms the most certain to result in the death of the patient. In the work of Moreau above referred to (pp. 29 to 36), may be found three very interesting reports of cases of this latter complicated preternatural pregnancy, which were observed and described by Patuna, William Hey, and Hoffmeister, the last of whom performed the operation of gastrotomy upon his patient immediately after her death, in the hope of saving the life of the fœtus, but without effect.

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[1] Des Grossesses Extra-Uterine, par M. Alexis Moreau, p. 27. Paris, 1853.

It is not necessary to the favourable termination of all cases of Fallopian pregnancy that the contents of the gestating sac should be removed from the body either by the efforts of nature or by a surgical operation, for there is quite a number of cases on record whose recovery took place with the fœtus remaining *in situ.* Owing to some cause or other not to be readily accounted for, the fœtus sometimes ceases to grow, and loses its independent life without being, properly speaking, dead, as it still remains an organized body, capable of undergoing many of the changes to which such bodies are subject. From published researches we learn that the following remarkable changes have been observed to take place in the sac and its contents: Most commonly the cyst has been found contracted, the liquor amnii in whole or a great measure absorbed, and the fœtus shrivelled, as though it had undergone a species of mummification. In other cases the sac has been found changed to a cartilaginous substance, or converted partially or entirely into bone; and the fœtus into bone wholly or partially, or changed into a cretaceous substance, or into a mass resembling adipocire. In Cloquet's *Pathological Anatomy* may be seen a fine view and section of a cretaceous or petrified fœtus. This transformation is rare in tubal pregnancies, nevertheless it does occur; in proof of which see the report of a case by Fritze, of Strasbourg, in 1779, and referred to in the works of Moreau and others. In abdominal pregnancies it is of more frequent occurrence. After the transformations mentioned fœtuses have been carried in the abdomen with little or no inconvenience for a number of years, reaching as high as fifty-four in one case on record. M. Majon discovered an ossified fœtus in a female who had died at the age of 78 years, and MM. Varnier and Mangin found two in a woman of 74, one of which was ossified and the other entirely decomposed, with the exception of the bones.

*Treatment.*—Fallopian pregnancy as well as the other forms of extra-uterine fœtation are to be regarded more in the light of curiosities than of diseases which are amenable to treatment, though under certain circumstances much may be done, either for the purpose of alleviating suffering or with a view of restoring the patient to health. What is most to be desired in the early months of gestation is the death of the fœtus, and for the purpose of producing this two plans have been proposed, one of which is to diminish the supply of blood for the development of the embryo by frequent bleedings, the quantity of fluid taken being proportioned to the physical condition of the patient; and the other, to pass an electric current through the sac in which the embryo is contained. These expedients appear to me to be of very doubtful utility, particularly the first, for how often do we meet with pregnant women who by attacks of acute disease have been reduced very much in flesh and strength, but in whom there is no apparent effect produced upon the fœtus other than to cause it to be below the standard in size and weight. In chronic diseases, where the constitution is defective, it is quite common to meet with miscarriages, and births of still-born emaciated infants; but this is due as much to the state of the general system as to the want of circulating blood for the nutrition of the fœtus. Diminishing the amount of the circulating fluid by venesection may possibly defer the time of the sac's rupture by preventing too great a determination of blood to the point where the embryo is being developed; but that it will produce the death of the fœtus remains to be proved by the future experiments of accoucheurs. With regard to the effects to be derived from the use of electricity and galvanism, time will also tell whether or no they are to prove of any practical use in the treatment of this disease. The value of the electric fluid as a curative agent is as yet very imperfectly understood, and every year, almost, introduces some new application of it. As it has been found of use in the treatment of aneurism it is not improbable that it may also prove useful in extra-uterine pregnancy, provided we can devise some way of applying it to the fecundated cyst so as to send the current through its contents without the risk of producing peritonitis.

The spasmodic pains accompanying preternatural pregnancy are to be treated with opiates, and if any signs of inflammatory action are present, with antiphlogistic remedies. If suppuration of the sac takes place (an event less apt to occur in Fallopian than abdominal pregnancy), and there is any evidence of a disposition in the abscess to open upon the surface of the abdomen, emollient and anodyne poultices should be applied; and an incision made with a bistoury, when the abdominal parietes have become sufficiently attenuated, for the purpose of giving exit to the pus and the debris of the fœtus. If the fœtus can be felt through the walls of the vagina, the vaginal section should be resorted to, or if an abscess point there, the orifice should be enlarged and the contents of the sac removed by manual assistance. The rectum may also be made the means of communicating with the sac, and a number of cases are on record where the fœtus, either entire or piece by piece, has been evacuated through this passage.

With regard to the operation of gastrotomy in extra-uterine pregnancies, there is little to be said that is favourable, and much that is the contrary. From the experience of the past, it is to be looked upon as almost as doubtful an expedient as the ligation of the aorta, yet it has had, and still has many advocates among French surgeons. Those who advise its performance, do not recommend it in the early months of gestation, unless the patient is in immediate danger from the prospect of a rupture of the cyst; and most of its advocates recommend that it should not be resorted to earlier than the seventh month, in the hope of saving the fœtus if the parent perishes. Moreau and Cazeau, in their late works, strongly oppose the operation while there can be any hope of a spontaneous cure, and recommend a resort to it only in cases where the pains of parturition have already commenced, and have not yielded to efforts made to subdue them. They evidently regard this operation as a last faint hope, only to be justified by the speedy prospect of death, and only to be performed when every other means is evidently useless.

## ART. XI.—*A New Uterine Elevator.* By J. MARION SIMS, M.D., Surgeon to the Woman's Hospital, New York.

OF all malpositions of the uterus, retroversion is the most common. Dr. Meigs, who is certainly the highest authority amongst us in obstetric medicine, says it comprises 75 per cent. of all cases that fall under his observation. Whatever, then, facilitates its removal is of importance to the profession. As a means of diagnosis Simpson's sound is perfect, and in many cases indispensable; but as a remedial agent it is susceptible of improvement. When passed downwards and backwards into a retroverted uterus, and then rotated half round on its own axis, thus suddenly elevating the organ, it often lacerates the lining membrane, as shown by severe pain and hemorrhage. Besides, if the surgeon has unfortunately given it too large a curve, the whole weight of the uterus will be sustained upon the point of the instrument as it strikes against the fundus, which, we are told, has produced perforation, with fatal consequences. This accident, however, cannot happen if the curvature be made short, and not more than $2\frac{1}{3}$ inches from the end of the instrument; for then the weight of the uterus will be sustained principally at the point of contact between the anterior lip and the sound at its curvature. But while the short curvature obviates the danger of perforation, it does nothing for the prevention of pain, and of violence to the uterine cavity.

I have long thought that Simpson's sound could be improved by making a joint or hinge in it near enough the end to prevent its striking against the fundus, and yet far enough to allow its fully entering the cavity, which, making the os tincæ the centre of motion, would enable us to roll the body in a right line directly upwards, instead of throwing it round by a lateral sweep, as when the instrument is rotated on its own axis. This idea is practically illustrated in the Uterine Elevator (see Fig. 2), which the artist has so well represented that further description is almost useless. It is about 13 inches long, and consists of a handle (3 inches), a shaft (7 inches), and a uterine stem ($2\frac{1}{3}$ inches), inserted into a ball which revolves at the end of the shaft, its axis being at right angles with that of the instrument. The ball is of ivory, about $\frac{5}{8}$ths of an inch in diameter, and has a belt of perforations $\frac{3}{16}$ths of an inch apart, extending around in a line with the stem. The shaft is a hollow cylinder containing a rod which is retracted at will by the slide *g*, Fig. 2, or pushed forwards by a spiral spring so that its point may lodge in any one of the perforations in the ball, whereby the stem may be held firmly at any desirable angle with the shaft.

Fig. 1 represents the upper part of the shaft with its rod *a*, the ball with its perforations, and the uterine stem, all nearly of the exact size and proportions. Fig. 2 represents the practical application of the instrument.

The sense of touch is sufficient to show the position of the uterus, and by

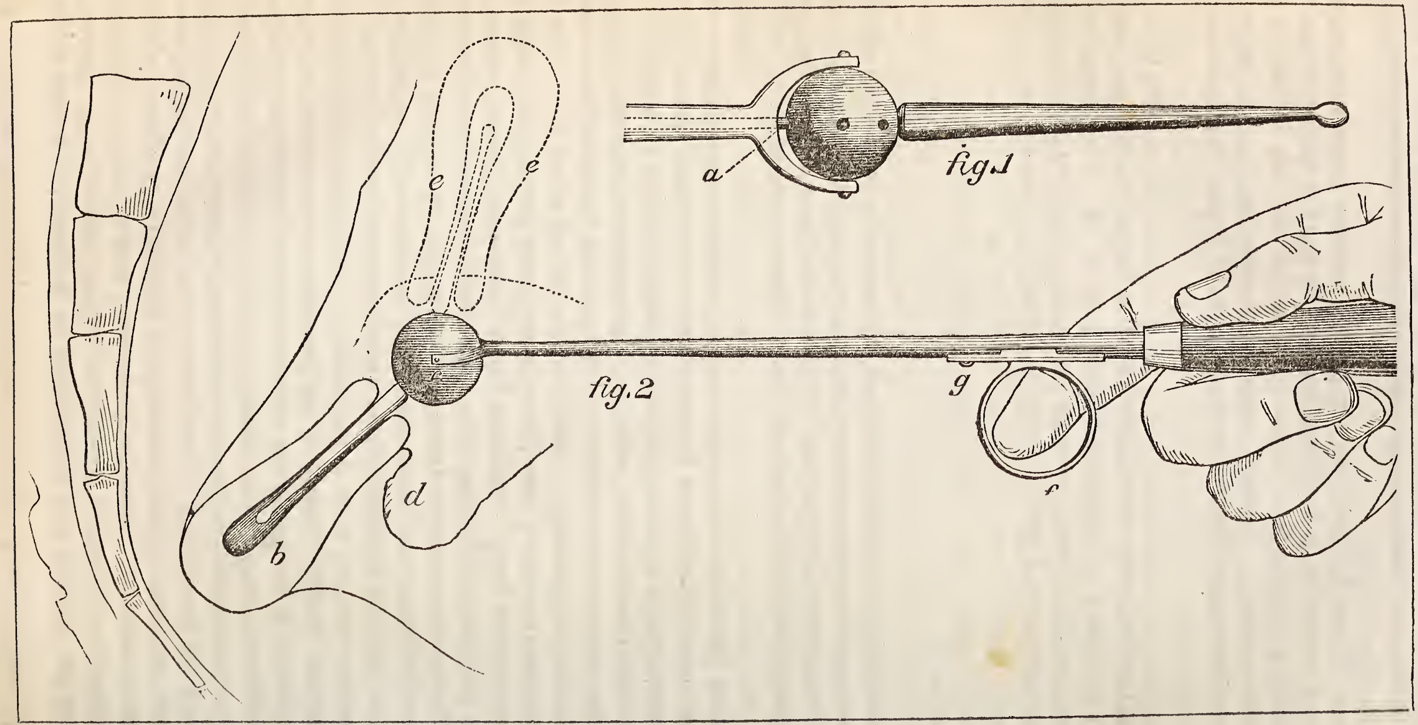

fig.1

fig.2

Simpson's sound we measure to the fraction of an inch its depth and degree of flexure. Then, and not till then, are we ready for the Uterine Elevator, taking care to adjust the stem best adapted to the case. The stem is set at the required angle with the shaft, and thus passed into the retroverted uterus *b*, with the ball close up to the os tincæ; then, by pulling back the slide *g*, the rod *a* is drawn out of the perforation in the ball, when it is free to revolve in the direction opposite to that of the motor power. Thus by depressing the handle and pushing the ball up towards the promontory of the sacrum, the uterus becomes further retroverted, but by pushing it gently and firmly downwards and backwards into the vaginal cul de sac *d*, the inevitable result is to revolve the stem with the uterus *b*, directly upwards, as shown by the dotted lines *ee*. The uterus may be arrested at any point of this evolution, merely by letting go the slide that holds the rod; or, the movement may be continued till it is completely anteverted, while the weight of the organ will be sustained mainly by the cervix resting on the ball. There are three stems which screw into the ball, one 2 inches, one $2\frac{1}{3}$, and the other 3 inches long, but the medium size is the one ordinarily used. Whenever the long or the short one may be needed, the previous use of Simpson's sound will indicate it. The instrument may be made of silver, of copper silvered, or of German silver. I prefer the first two, because the stem often requires a little flexure to adapt it to acute uterine curvatures, particularly where there is much cartilaginous degeneration of tissue. German silver is not soft enough for this purpose.[1]

After the malposition is rectified, it will, of course, require some mechanical contrivance to keep it so: whether Meigs' ring, or Hodge's instrument, or some of its various modifications, or Simpson's intra-uterine stem, will depend upon the peculiarities of the case, and the tact and judgment of the operator.

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## Art. XII.—*Exsection of the Trunk of the Second Branch of the Fifth Pair of Nerves, beyond the Ganglion of Meckel, for Severe Neuralgia of the Face: with Three Cases.* By J. M. Carnochan, Professor of Surgery in the New York Medical College, Surgeon-in-chief to the State Hospital (New York), &c.

The accounts heretofore given by authors of neuralgia, or *tic douloureux* of the face, are of a very vague and indefinite character. Numerous essays and monographs have been written on this subject, since the time of Fothergill, who published, in 1776, an elaborate description of the disease, which attracted considerable attention. In all these efforts, the pathology of *tic*

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[1] The instrument is made by Otto & Kœhler, Chatham Street, New York.

*douloureux* is described with ambiguity. In practice the treatment has been as empirical as it has proved to be unsuccessful. The seat of the disease has been referred to distant irritations, especially in the splanchnic cavities—to a foreign body acting upon the nerve—to the pressure of bone upon some portion of the nervous trunks. By some authorities, it is referred to increased vascularity and thickening of the nerves; while Astley Cooper, on the contrary, states, that the nerves present their natural colour, and are rather diminished in size than enlarged. It can scarcely be supposed that beneficial results should follow from treatment based upon theories so different in character.

*Tic douloureux* of the face, proper, or of the second branch of the fifth pair of nerves, is by far the most common form of facial neuralgia. This may be explained by the more numerous branches, which are given off by this trunk, and by the position which these branches occupy—in some places pent up in osseous canals, and in others, subjected to exposure, to changes in temperature, as well as to the agency of morbific influences, from which the other two trunks of the fifth pair are exempt.

The same laws which govern neuralgic disease of one of the branches of the fifth pair, must be applicable to the disease in the other trunks. I believe that the phenomena of neuralgia can be explained with as much precision as in any other disease, when well understood. In cases similar to those described below, whatever may have been the original exciting cause, I have no doubt that the real seat of the disease is in the trunk of the nerve, in front of the *foramen rotundum*—in some part of it, or in the whole of it. The causes of the disturbed and changed condition of the trunks of the nerve may be numerous—prolonged irritation upon the periphery—exposure—injuries—tumours; diseases of the teeth—pressure resulting from periosteal or osteal thickening of the osseous foramina or canals—sudden suppression of any of the important secretions, as of the catamenial discharge. From one or more of these causes, the trunk itself may be primarily affected, or acting upon its ramifications, the irritation may be propagated to it. Prolonged irritation induces inflammation, and this generally remains passive or chronic. Some of the terminations of inflammation—such as the effusion of lymph among the interstices of the neurilemma or the nervous tissue itself—may become developed; leading to a vascular, engorged, thickened and enlarged condition of the nerve, or to a softening of it, at one or more points. In fact, vascular engorgement, or inflammation, with some of its consequences, of the neurilemma alone, or of it and the nerve together, by whatever cause produced, is the condition which constitutes the pathological changes in the trunk.

The three cases related below afford proof of what has just been stated. In each instance, the exsected nerve was found to be red, vascular, engorged and considerably enlarged.

The diffused character of the pain can be easily understood, if we take into consideration the numerous ramifications of the second branch of the fifth pair, and the extensive surface over which their ultimate filaments are distributed. The periphery of the nerve occupies not only the superficial parts of the face, but extends deep amongst the bones of the upper jaw, to the nasal fossæ, to the septum nasi, to the hard and soft palate, to the pharynx, to the inner ear, to the orbit, and to the temporal and malar regions.

It is well established, that if the trunk of a nerve be irritated along its course, the painful sensation will be referred to its periphery. If the ulnar nerve, for example, be struck where it passes behind the internal condyle, a sensation of pain is excited, which is referred to the little finger and to the ulnar border of the ring finger; and if a prolonged irritation be kept up at this point, the skin of these fingers becomes tender to the touch, the sensibility being very much increased.

It is by this principle—which governs the action of the stimuli upon the nerves of sensation—in connection with the anatomical distribution of the nervous ramifications, that the various phenomena of neuralgia can be explained. The disease being seated in the trunk of the nerve, we can readily understand that the pain must be referred to the peripheric extremities of the nerves, and will there be felt, as long as the branches are in communication with the encephalon.

From these views, we can perceive how futile the operation of division of the nerve at the *foramen infra-orbitale* must be. Where the trunk of the nerve is extensively diseased, no operation can rationally lead to a successful result, unless all the branches emanating from the trunk are cut off from communication with the brain.

I believe that, in such aggravated cases of neuralgia, the key of the operation is *the removal of the ganglion of Meckel, or its insulation from the encephalon.*—Where even a large portion of the trunk of the second branch of the fifth pair has been simply exsected from the infra-orbital canal, the ganglion of Meckel continues to provide to a great extent the nervous ramifications, which will still maintain and keep up the diversified neuralgic pains. Besides, the ganglion of Meckel, being composed of *gray matter, must play an important part as a generator of nervous power,* of which, like a galvanic battery, it affords a continual supply; while the branches of the ganglion, under the influence of the diseased trunk, serve as conductors of the accumulated morbid nervous sensibility.

Case I.—Henry Rousset, a French physician, residing in Greensborough, Caroline County, Maryland, consulted me in the early part of October, 1856, for severe neuralgia, which had for several years rendered him incapable of following his profession. He was of nervous temperament, good constitution, and sixty-nine years of age.

The disease first made its appearance in September, 1851, commencing with severe and lancinating pains about the region of the left cheek and orbit. These pains continued for five or six days, and then disappeared, leaving him almost free from them for about four months. At the expiration of that time, the neuralgic pains again returned with more violence, extending over the region of the left cheek, and continuing almost without intermission, for more than a week. After this exacerbation, the patient again became comparatively free from pain for a short interval; after which, the attacks returned with increased severity, and were renewed with greater frequency, more especially in the cold season, and in damp weather. As the disease progressed, the pain was not confined alone to the eye and cheek, but would also attack the lip and nose; each paroxysm being of longer duration than the preceding. With but slight variation, the disease went on in this way to harass and distress the patient for four years. About the commencement of March, 1856, the neuralgic exacerbation assumed a more violent form, marked by excruciating and almost unremitting suffering. He was at this time unable to eat, drink, converse, or laugh, without having a most violent paroxysm, causing him to shriek in anguish. The paroxysms were more severe during the night than day: sleep left him: his constitution began to give way, and his mind became much enfeebled. The slightest touch upon the surface of the face, a current of air or a mouthful of water acting on the palate, would throw the patient into a violent paroxysm of agony. During this long period of suffering, all the known remedies which have at times been extolled for neuralgia of the face had been tried—narcotics, tonics, anti-spasmodics, with counter-irritants, and galvanism, without producing any appreciable result. In this distressed condition, the patient, wearied of existence and unable any longer to endure a life so made up of excruciating torture, presented himself to me for my advice, at the beginning of October, 1856. He expressed himself willing to undergo any operation, however severe, which held out the prospect of relief. Having no internal remedy to propose which had not already been administered, and having no faith in the mere division of the nerve upon the face, I proposed to him the exsection of the trunk of the second branch of the fifth pair of nerves to a point beyond the ganglion of Meckel. Being a physician himself, I explained at length my views (as expressed above) in regard to this malady. He immediately consented to have the operation performed, and desired that the earliest time should be appointed. I consequently agreed to perform the operation the following day, the 16th of October.

*Operation.*—The principal instruments necessary for this operation are a trephine, the crown of which is three-quarters of an inch in diameter, an elevator, chisels of different shapes and sizes, a leaden or iron mallet, the bone forceps of Lûer, small pieces of sponge tied to a stick or a piece of whalebone, and a small fixed trephine of half an inch in diameter, which may be used to perforate the posterior wall of the antrum. The assistants being properly arranged, the patient was seated upon a solid chair, opposite a good light, and was put under the influence of chloroform. The head was rested upon the breast of an assistant, who maintained it in this position. An incision was now made on the cheek, commencing near the internal angle of the eye, on the inferior edge of the orbit, opposite the anterior lip of the lachrymal groove. This incision was carried downwards and slightly outwards, for about an inch, to a point opposite to the furrow on the lower portion of the ala of the nose; another incision, which also terminated at this point, was made, commencing about half an inch below the external angle of the eye, opposite the edge of the orbit, thus forming a V incision, in the area of which is situated the *foramen infra-orbitale.* The flap thus resulting was thrown upwards, and the branches of the second branch of the fifth sought for; some of these being found, they served as a ready guide to the trunk of the nerve. This was now isolated from the surrounding tissues up to the point of exit upon the face from the foramen. The lip was now everted, and the mucous membrane detached from the superior maxilla along the line of junction between the cheek and the gum. A sharp-pointed bistoury was now inserted at the apex of the V incision, into the mouth, and carried downwards, so as to divide entirely the tissues of the cheek and upper lip, along a line passing midway between the ala of the nose and the commissure of the lips. The two flaps thus formed were now dissected from the osseous tissue beneath, one being reflected outwards, towards the ear, the other internally, towards the nose. The whole front wall of the *antrum maxillare*, with the nerve passing through the *foramen infra-orbitale*, was thus exposed. The crown of the trephine was now applied on the anterior wall of the antrum, immediately below the *foramen infra-orbitale*, and an irregular disk of bone removed, so as to expose freely the cavity of the antrum. The circumference of the foramen, the hardest portion of the canalis infra-orbitalis, was now destroyed by Lûer's forceps, and a small chisel. The trunk of the nerve was now traced along the osseous canal in the floor of the orbit, which was broken down with care, so as not to encroach upon the tissues in the cavity of the orbit. Arriving at the back of the antrum, the posterior wall of this cavity was broken down with a small chisel, and the portions of bone removed. The trunk of the nerve was now still further isolated from the other tissues in the *spheno-maxillary fossa.* The posterior dental nerves being divided, and the dissection being carried still further, the branches given off to form the ganglion of Meckel, were reached. These were divided, and also the branch given off to run up towards the orbit. Lastly, by the use of blunt-pointed scissors, curved on the flat side, the trunk of the nerve was divided from below upwards, close up to the *foramen rotundum.* The hemorrhage was not very profuse, the labial arteries being easily controlled by pressure of the fingers, and the branches of the internal maxillary artery, in the *spheno-maxillary fossa*, by dry lint, or what is better, the compressed sponge. The lips of the wound were brought together and maintained in place by thirteen points of twisted suture, the German or Carlsbad pins being used.

This severe and trying operation is perfectly justified by the fearful nature of the disease for which it was projected. It is one of those operations which could not be supported by the patient without the influence of chloroform. The handling of so large a nervous trunk with the forceps, and the necessary contact with the hard instruments, while separating it from its surrounding connections, would, I suppose, be beyond human endurance, without the aid of the anæsthetic influence of chloroform or ether. For the rest, the effects of the cicatrices upon the countenance can scarcely be called disfiguring, and the patient speedily recovers without suffering from much constitutional disturbance.

In this operation, and in those connected with the two succeeding cases, I was assisted by my colleague Prof. Cox, by Drs. Proudfoot, Abrahams, Selden, Guleke, and Casseday; and by my pupils, Messrs. Dougherty, Henry, Scudder, and others.

*Condition of the Nerve.*—The trunk of the nerve in this case was much larger than natural in nearly its whole extent. The neurilemma was very vascular, and the nervous tissue proper was also engorged and red; the trunk, after its removal, was so red as to have somewhat the appearance of muscular tissue. The length of the nerve removed was a little more than an inch and three-quarters. The lining membrane of the antrum was sound, as well also as the bones of the antrum and the osseous wall of the *canalis infra-orbitalis.*

*Progress of Union and After-treatment.*—*Oct.* 16*th.* Six hours after the operation, the patient was visited. His pulse was 100; there was a slight fever; he complained of thirst, and lemonade was ordered. He spoke of a desire he had to vomit, which he ascribed to the chloroform. He stated that he felt slight twitchings on the nose, and at the corner of the lip.

17*th* (Friday). The patient was remarkably well under the circumstances; sitting up; pulse 90; tongue lightly covered with a white fur; complained of pain in the wound, also of shooting pains in the left eye; he remarked that he could stick a pin into the upper lip and cheek without causing pain, there being no sensation in that region. Ordered chicken broth, and wine and water.

18*th* (Saturday). Patient improving; wound healing; pulse natural; no fever; spoke of the numbed sensation in his face.

19*th* (Sunday). Pulse full and natural; good appetite; partook of a beefsteak; in the afternoon four suture pins were removed; slight pain in the wound; no return whatever of the neuralgia.

20*th* (Monday). Cure progressing; healthy suppuration from wound; appetite excellent; general health much improved.

(Tuesday, Wednesday, Thursday). During these days the rest of the pins were removed; patient felt no pain whatever either in the wound or cheek; wound in the antrum syringed with tepid water.

25*th* (Sunday). Patient attended church; feels no pain whatever; incision of the upper lip and cheek entirely healed.

28*th*. Patient entirely well.

30*th*. Returned home to Maryland in high spirits, and delighted at the result of the operation.

*December* 7*th*, 1857. Fourteen months after the operation he writes to me that he is enjoying excellent health, and has been entirely free from neuralgic pain.

Case II.—Florence Cordello, a native of Italy, aged 54 years, of lymphatic temperament, chocolate maker by trade, was admitted to the State Hospital on the 14th of September, 1857, suffering from severe *tic-douloureux* of the left side of the face. The following is the account handed to me by the Assistant Surgeon, Dr. Guleke. In the year 1828, the patient contracted a very severe cold from exposure, and about this time he was seized with the pain for the first time. According to his own description, the pain started from the *foramen infra-orbitale*, extending upwards to the forehead, and downwards into the teeth; the paroxysm lasting about ten minutes. He supposed it to be toothache, and had one or two teeth extracted. An interval of eight years took place, when he was again attacked with neuralgic paroxysms, lasting from five to ten minutes. Again, after the lapse of a year, the paroxysms reappeared in a more severe form, and at shorter intervals.

The patient, still believing his teeth to be the source of the disease, had all of them extracted on the left side of the upper jaw, but without any benefit. During these attacks he had been subjected to many kinds of treatment, both internally and externally: he also repaired to some of the mineral springs on the Rhine, but still to no purpose. He continued thus to suffer more or less intensely from the neuralgic paroxysms, for a period of time extending from 1837 to 1846, and with detriment to his general health. In 1846, while passing through the city of Heidelberg, in Germany, he consulted the celebrated Chelius with the hope of obtaining some beneficial result from his advice. That professor divided the nerve as it emanated from the *infra-orbital foramen*, by incisions from the mouth, and six weeks after, again performed the same operation, without any favourable result. During the next six years the patient continued to suffer from the neuralgic paroxysms of more or less intensity.

Oppressed by extreme suffering, he again sought relief from an operation, and in 1852 the nerve was again divided from the mouth by forcing up the lip; the actual cautery being at the same time applied, by pushing the instrument from the mouth upwards into the wound as far as the *foramen infra-orbitale.* This operation appeared to give some relief, and during the two succeeding years, the patient's sufferings were somewhat alleviated. About two years ago, the paroxysms returned in the most aggravated form, progressed, and continued without much abatement. He, on the 1st of September last, being in New York, again submitted to an operation for division of the nerve. This time, the branches of the nerve were divided by cutting through the integuments directly upon the infra-orbital foramen; this operation caused no other effect than insensibility to the touch in the soft tissues near the infra-orbital foramen. Two weeks after this, he entered the State Hospital. The condition of the patient was then as follows: Notwithstanding the repeated division of the nerve, there was sensibility to the touch over the whole region of the cheek; the inner side of the lip alone appearing to be insensible. The patient describes the pain as starting from the *foramen infra-orbitale* and extending up as far as the *ligamentum palpebræ internum,* and also to the external corner of the eye; from the latter point, the pains shot down in nearly a straight line to a point about one inch to the outside of the left corner of the mouth, and a little below a line drawn horizontally on a level with the commissure of the lips. The pains also extended backwards, through the more deeply seated portions of the face, shooting from the inner corner of the eye, along the base of the nose, and striking backwards towards the *spheno-maxillary fossa.* The pain was of the true neuralgic character, and so intense as to drive the patient into a condition verging on delirium. A slight touch on the cheek, the inside of the mouth, or on the hard or soft palate, swallowing, or speaking, excited almost instantaneously the paroxysms in their severest form.

*The Operation.*—The operation in this case was performed after the same manner as the preceding, and was modified only by the greater depth of the antrum and face. There was also more hemorrhage from the spheno-maxillary fossa; this was controlled by compressed sponge pressed into the fossa. Supposing that hemorrhage might return, the lips of the wound were brought together by adhesive plaster, one suture only being used. The other sutures were inserted the following day. The nerve was cut from above downwards. The ganglion of Meckel was drawn out, hanging to the trunk of the nerve.

*Progress of Union and After-treatment.*—Compressed sponge was applied in the deeper portion of the wound; the external surface was closed with one suture; an anodyne was ordered for the night.

*Oct.* 11 (Sunday). Patient slept well during the night; pulse 76; no bleeding; five suture-pins applied; ordered an anodyne.

12*th.* Patient slept well; no pain whatever; pulse 84; complained of thirst; but little appetite; speaks and swallows without pain.

13*th.* Slept badly; had an attack of dysentery; pulse 96; felt a slight pulsating pain in the wound, which, however, was doing well; states that there is no feeling over the surface of the left cheek from the inner angle of the eye, descending along the nose to the lip, and upwards to the outer angle of the eye, including the lower lid; ordered opium and quinine. (*Afternoon*), dysentery subdued; pulse 96; more cheerful.

14*th.* Patient improving; pulse 92; a portion of the pins removed.

15*th.* Remaining pins removed; wound presents a healthy appearance; pulse natural; slight pain felt in the course of the wound.

16*th.* Removed the piece of compressed sponge, which had been placed at the back of the antrum during the operation, to restrain the bleeding from the spheno-maxillary fossa.

18*th.* Patient doing well; eats well, and sleeps naturally.

26*th.* Still entirely free from neuralgic pain; the whole expression of the face changed from that of suffering and anxiety, to cheerfulness and serenity.

28*th.* Discharged from the hospital entirely cured, and in good health and spirits.

*Dec.* 8. Visited the hospital; still free from pain and in good condition.

*Condition of the Nerve.*—The nerve in this case, as in the previous one, exhibited a similar appearance. It was thickened, vascular, and engorged. The neurilemma and proper tissue of the nerve were both affected. The length of the trunk removed was two inches.

Case III.—Mrs. Mary G. Stevenson, a native of Portsmouth, England, and who had borne children, 55 years of age, of full habit and sanguineous temperament, consulted me in the month of September, 1857, for severe neuralgia of the left side of the face. She had been a resident of the Northern States for thirty years, and had enjoyed, generally, remarkably good health.

On the 12th of August, 1851, while eating a plum in her garden, she was suddenly seized with a vivid shock of pain, commencing on her cheek, and passing through her jaw, as if caused by a sharp-pointed instrument, suddenly driven through her face; shooting pains of this character, with intermissions of entire abatement, continued for several days. A dentist was consulted, who, attributing the symptoms to the teeth, extracted several of them, but without the slightest benefit to the patient. The paroxysms continued with more or less severity for two months.

At the end of this time, they suddenly abated in their severity, and the respite lasted for about six weeks. Upon hearing of the sudden death of a friend to whom she was much attached, the paroxysms were again renewed; they became more frequent; the intervals were shorter, and the intensity of pain was increased more and more with each succeeding attack. During the year 1852, the pain and paroxysms still continued with unyielding severity. The *tic* would now last for two and three months, with scarcely any of the intervals which had heretofore occurred. Cold air, the drinking of fluids, the slightest touch upon the cheek, or any sudden mental emotion, would invariably excite the most fearful paroxysms. During the year 1854, her condition was not in any way ameliorated; the pain, if possible, was more severe, and her general health suffered from the want of rest. During the year 1855, the disease progressed with the same severity. In the early part of the year 1856, the paroxysms became still more aggravated; the patient, at times, becoming almost delirious—starting up, running about her room, and screaming like a maniac. In the latter part of September, she sought relief from a surgeon in this city, who divided by subcutaneous incision the branches of the infra-orbital nerve, as it issues from the infra-orbital foramen.

About this time, she also took large quantities of various narcotics, and of the carbonate of iron. After the operation, she experienced some relief. The amelioration continued from October, 1856, until May, 1857, when the paroxysms were again renewed in their severest form.

The pain now became almost continual, depriving her nearly entirely of sleep; she was unable to eat without torture, the act of swallowing invariably bringing on a paroxysm. During these exacerbations, the pain was diffused in different directions, extending from a point a little below the infra-orbital foramen, or from the ridge of the gums, and striking through the superior maxillary bone towards the deeper portions of the face, and towards the orbit, and sometimes extending towards the region in front of the ear. She described the pain as of a beating character at times; each shock succeeding another in rapid succession, as if keeping time with the ticking of a clock. During this long period of suffering, she had been under the alternate care of several physicians; the various remedies most approved of in this kind of disease had all been faithfully and sedulously tried; stramonium, aconite, belladonna, hemlock, opium, morphia, chloroform, carbonate of iron, valerianate of ammonia, and other medicaments had been administered internally; while externally, in addition to the division of the nerve, blisters, sinapisms, hydrocyanic acid liniment, tincture of aconite, and chloroform had been resorted to—also electricity and galvanism. At the time I was consulted, she was suffering night and day from repeated and excruciating attacks, and, as she herself stated, she had visited the city to have an operation performed at all hazards, however desperate it might be, if I could only hold out any prospect whatever of its affording relief. Her general health was tolerably good, and she did not complain of loss of appetite. I explained to her the nature of the operation which I believed to be the only one suited to her case. She immediately assented to submit to it as early as possible.

The *operation* was performed after the same procedure. The face was in this instance, also, very deep. The hemorrhage from the spheno-maxillary fossa was considerable, and was stopped by a piece of compressed sponge to which a strong ligature was attached, by which it could be removed.

*Progress of Union and After-treatment.—Nov.* 5 (Thursday evening). As soon as the operation was completed, the patient retired to her bed. Vomiting came on a few hours after, owing, probably, to the quantity of chloroform which had been used.

6*th.* Had slept tolerably well during the night; felt very little pain; pulse 80; no fever; complained of some pain in the wound, but had no neuralgic pain.

7*th.* Left side of the face slightly swollen; puffiness about the eyelids; has no pain; has slept well without any anodyne; states that she feels better than she has for months; pulse 80; skin natural; slight thirst; five of the suture pins removed; line of incision looks as though union by first intention was going on favourably. Still kept on fluids for nourishment—gruel, rice-water, ice-water, toast-water, and chicken tea. Ordered a gentle aperient.

8*th.* Had slept well; tumefaction of face subsiding; complains of headache; cloth wetted with cold water applied on forehead; same diet continued; pulse natural; removed the sponge which was used to stop the bleeding from the spheno-maxillary fossa; this came away without any difficulty by slight traction, a little blood following. Complains of slight pain in the orbit. Removed six suture pins, leaving one only—that uniting the free border of the lip. Fluid diet as before.

9*th.* Patient slept well; headache less; pulse 78; no neuralgic pain; a weak solution of the tincture of arnica ordered, to bathe the cheek with; removed the last pin; union by first intention, along the line of incision, complete.

From the 9th until the 16th all has progressed favourably. No neuralgic pain whatever; sleeps well; swelling on cheek diminishing; pain has entirely left the orbit; secretion into the mouth from the wound in the antrum diminished. Ordered a gargle of the tincture of myrrh. Appetite has also returned. Had been sitting up, and walking about her room without any inconvenience. Has taken a little sulphate of magnesia; has not required any anodyne.

*Dec.* 3. The patient has been progressing favourably up to this time. The wound has healed entirely, the line of cicatrix is becoming effaced; not the slightest trace of tic douloureux remaining. There is no paralysis of the muscles of the face upon the side operated on.

In the case of this patient, the nerve was enlarged, very vascular, thickened and red. Two inches of the nerve were removed.

45 LAFAYETTE PLACE, NEW YORK, *Dec.*, 1857.

## ART. XIII.—*A Singular Case of Catalepsy successfully treated with the Nitrate of Silver.* By WM. R. KING, M. D., of Louisburg, N. C.

THE patient was a girl aged 11, delicately formed, dark complexion, black hair, with unusually brilliant black eyes, sprightly countenance, quick spoken, and playful in manners. She had a slight attack of sickness during the month of August, 1856, accompanied with fever and headache. However, her symptoms were so mild that her parents considered it unnecessary to call in a physician. She soon recovered, but during convalescence it was observed that she occasionally became affected with spams, chiefly in her upper extremities.

I was called to visit her in consultation with the family physician, and very soon after approaching her bedside she had spasms in the upper and lower extremities, which I supposed was caused by mental agitation at the sight of a stranger. The fingers and toes were in a semiflexed position, the feet being extended in a line with the legs, which were in a rigid state of spasm, also the arms throughout their length. The spasm was of the tonic order, the parts remaining perfectly rigid, which required considerable force to overcome. The limbs remained in every position in which they were placed, as in ordinary cases of catalepsy. She was conscious of all things around her, and answered questions promptly, though in a subdued tone. Her pulse was accelerated and small, but became greatly reduced in frequency when she was free from spasm. Her father remarked that she would remain in that condition an indefinite time, unless the contraction of the muscles was overcome by force; whereupon he extended the fingers, which caused an immediate relaxation of the spasm of the upper extremities, but the legs and toes remained fixed until the same process of "unlocking" (to use his own language) was performed, when she immediately assumed a happy and playful countenance as formerly. Pressure on the nape of the neck, where I found considerable tenderness, also on the crown of the head, over a space about the size of the palm, would immediately produce the same state of things. Sweeping the floor, patting the foot, sawing wood, and all harsh or grating sounds, from whatever cause proceeding, had the same effect. If she was in a profound sleep the floor could not be swept ever so softly without awaking her and causing spasm to some extent.

The treatment consisted, first, in a mild purgative course with blue mass, &c., followed by the valerianate of zinc, with counter-irritation over the cervical vertebræ; and subsequently the various chalybeate preparations were tried, but without any improvement whatever in her condition. This plan of treatment was pursued for several months at irregular intervals.

My second visit was made some time during the month of May last, when I found the same symptoms existing, and in some respects in an aggravated form, although on my arrival I found her at play. Pressure on the crown of the head, as formerly, produced spasm commensurate with the amount of force applied. At one time it became so violent as to cause considerable distortion of the features by a spasmodic action of the muscles on the right side of the face, as well as the right oblique muscles of the eyes, drawing the globe considerably to the right and downwards. She became speechless, but retained her consciousness. Whenever she was thus violently affected, which her father informed me was not often, he could not unlock her in the usual mode of extending the semiflexed fingers and toes, but would take her in his arms and toss or swing her to and fro, when a sudden relaxation followed.

The tenderness which was found to exist over the cervical vertebræ at my first visit had now been transferred to the four lower dorsal and lumbar vertebræ, over which there was considerable tenderness. Appetite and digestion good.

The treatment was renewed with $\frac{1}{4}$ gr. doses of the nitrate of silver three times a day, gradually increased to $\frac{1}{2}$ gr., with counter-irritation with strong croton oil liniment over the tender vertebræ, under which she rapidly improved and entirely recovered from all nervous disorders. Whenever, during the treatment, she complained of headache or any other cerebral disturbance, the nitrate was suspended for a while, and the bowels gently moved with small doses of blue mass, followed by a saline cathartic or castor oil. The patient will be kept upon some mild chalybeate until her general health is thoroughly invigorated; but she has been for many weeks entirely free from all her former symptoms. There remains considerable tenderness of the scalp and vertebræ, and pressure applied to either part causes much pain, but without the slightest spasm of any of the muscles. Her general appearance is now good, complexion beginning to assume a healthy hue; and her gait, which formerly was cautious and somewhat tottering, is now nimble and strong.

# REVIEWS.

Art. XIV.—*Elements of Pathological Anatomy.* By Samuel D. Gross, M. D., Professor of Surgery in Jefferson Medical College, &c. Third edition, modified and thoroughly revised. Illustrated by 342 engravings on wood. Blanchard & Lea: Philad. 1857. 8vo. pp. 771.

This book may be considered as a representative work. It marks the level of the anatomical school, being just such a book on pathological anatomy as an intelligent surgeon of large experience might be expected to write. This understood, nobody, who begins with the title page and reads perseveringly, need be disappointed. The reader, who confidingly accepts the guidance of Dr. Gross, will be conscientiously led over the whole *surface* of the domain justly belonging to pathology, and will find the way very pleasantly beguiled by clear and simple descriptions. Measurements will be given with scrupulous exactitude—and the hues of all objects that have colour will be noted down to the most delicate shade. He will learn the feel and the smell of everything which can come within reach of his digits and nose. He may gain a complete acquaintance with the whole outside of pathological anatomy by means of Dr. Gross's introduction; but, after all, it is as incomplete and unsatisfactory as to attempt to know a man by looking through the windows of his dwelling.

How anatomy may be studied, and how anatomy should be taught, are general questions of no little practical weight, and we propose—since we have so little reason to find fault with the facts contained in the book before us, which are really inexhaustible in amount and stated with admirable clearness and simplicity in most cases—to draw the reader's attention to the errors of philosophic method which belong to this, in common with a large class of treatises on pathological anatomy. It is of no avail to sneer at medical philosophy, or to assert that there is nothing to represent it but pretentious folly. Every medical man has a medical philosophy which is rooted in the groundwork of his nature—close by his politics and his religion. And every medical book represents in some sense, a phase of medical philosophy.

All the systems of anatomy, and all the individual students of anatomy, divide themselves by a natural repulsion, into the two classes which represent with more or less exactitude, the modes by which almost all the subjects of human observation and speculation may be approached. There is an esoteric and an exoteric phase for all matters of sight and subjects of faith. Philosophers, theologians, poets, social reformers, mathematicians, painters, music-makers, as well as anatomists, classify themselves on this basis. Thus we find Serres, Oken, Owen, Paget, De Blainville, Robin, and Bouchut standing *vis-à-vis* to Kölliker, Lehmann, Quain, Carswell, and Gross; Locke stands *versus* Schlegel and Comte; Malthus against Coleridge; Tennyson and Keats against Scott and Campbell; Edwards against Fenelon; Louis Napoleon against Prudhon; Ruskin against Joshua Reynolds; Bellini against Wagner, and Prof. Pierce against Merriam.

Had all these men studied medicine, it were easy to conceive from what point of view each one would have looked at life, health, and disease. Looking closely at these disputants we should see, on the one hand, the Anatomists, *pur sang*, who work from without inward; from the particular *towards* the general; from the material form towards the *insaisissable;* from special organs towards developmental principles—but without attaining so far, as a matter of course. Most of them fall short in the pursuit and lose sight of the end of biological investigation. "How hard it is to compass the means by which one mounts to the fountain head; and before he has got half way, a poor devil must probably die!" said the wearied student who began at the wrong end of the tangled thread. Anatomists may travel all over the palpable and the sensible with great assiduity and keenness of vision, and with "best luck catch only a fox." But they go with knowledge and safety as far as they go—taking care to affix one end of their telegraphic wire to a rocky fact on shore, before starting off into the deep with the other. This class is well represented in our Young America School, and is unquestionably on the right course; we would only ask of it, to look a little deeper through solidism and humoralism till it arrive at the apprehension of the dynamics as well as the statics of life.

Among the Vitalists are men of broader view and deeper ken—men who possess capacity for large generalization. But most of them overleap and outrun the slow rolling ball made up by toilsome investigation, and playfully knock about hypotheses like snow-flakes. For Stahl, Boerhaave, and the school of Montpellier, the study of pathological anatomy could have but little interest. They do not need pegs to hang their theories on, for most of them are lighter than air, and keep quite out of sight. The men of this class are, for the most part, unsafe practitioners of medicine, having an unequivocal leaning towards mediæval therapeutics; yet they are clinging to a great truth, while plodding near-sighted skeptics are scratching the earth's surface in quest of the Νομος, and measuring cranial bumps to gauge the divinity that has its throne inside. They have apprehended a great underlying fact, but they forget that vital force is not an entity, but only a "special property" of organic structures.

Out of the midst of these is developing the new school. Its basis is broad and its aim is high. These thinkers have found out that there can no more be an absolute solidism, than an absolute vitalism, and there can no more be either of these than matter without spirit, or spirit without matter—the power without the deed. Thus escaping the "coarse hypotheses of materialism, and the absurd logic of immaterialists," they are promulgating the doctrines of modern *Organo-Vitalism*." of which De Blainville, Robin, Bouchut, and Littré are the ablest exponents. They talk rather of general than of local disease—of idiosyncrasies, inheritance, types, diatheses and morbid elements more than of the numerical force of so many cases collected, or of the colour, size, weight, and consistence of hepatized structures.

These are not differences without consequence—they are of primal importance. But we should not dwell upon them at this time if we did not, in the book under consideration, see practical errors directly traceable to what we believe to be faults of philosophy—and, not only in this book, but in all the libraries and in all the lecture-rooms the lookers from within face the lookers from without. What coincidence of opinion can there be when the first principles fly apart to the two poles. Let us look at it in the common questions of the time. To one mind, puerperal fever appears simply as the result of uterine phlebitis, or peritonitis, or inflammation somewhere else about the womb, or its appendages. While to another, puerperal fever is plainly an example of blood-poisoning, manifesting itself in the particular locality which it selects through the accidental circumstances of the patient's child-bed condition. For this observer it is as much a case of blood-poisoning as is scarlatina with its local excitements and exudations, or hospital erysipelas.

Again, pneumonia appears to one to be simply an inflammation of the lung—and, since inflammation is a unit—a uniform, well-defined, and invariable condition appertaining to all organs and tissues—as a matter of course, inflammation of the lung does not differ in essence or phenomena from inflammation of the subcutaneous tissue produced by a foreign body. While on the contrary, the same pneumonia is regarded by the deeper searching eye as a general disease. It may have arisen from a local irritation—as from the absorption of some morbific material—(but if in this way local, the primitive effects are not with any certainty to be found in the lungs); but, when fairly germinated, it is an essentially general disease, manifesting itself by various phenomena, among which are pulmonary softening, with an afflux of blood; exudation of serum and fibrin; new formations of cells and globules, and the retention of chlorides which should have been eliminated with other urinary elements. The heat of skin and purple flush of cheek are not results necessarily of the impairment of respiratory function. Still further to illustrate this point, let us select an *erysipelatous cynanche;* to one, it appears as nothing more than a sore throat, and is treated as such, notwithstanding the preceding chill, headache, and pains throughout the limbs. Another, to whose mind the succeeding blush over a square inch of mucous surface seems an inadequate cause for a preceding *malaise,* looks upon the quinsy as the counterpart of the rose spots of typhoid, the herpes of catarrh, and the semilunar whorls of measles.

We think it of the first importance that teachers should impress upon their pupils a sound, approximately sound, philosophy. There have been many who have affected a disgust for all hypotheses and philosophies of medicine. Thus raising the old question of the Dogmatists and the Empirics, who were debating in the time of Celsus, and have not yet settled the dispute between them, whether there can be a speculative medicine, and whether all the accepted facts and ideas of medical science were or were not based upon empiricism. This oscillating point has not yet been fixed, nor has such a consummation been possible till the late advances in general natural history, had established certain bases, from which a science could be constructed from the known towards the unknown. To-day, says an enthusiast, we may boast that we have the knowledge of a speculative system of medicine, and it has been every day of these last years developing itself before our eyes by means of investigations which more and more demonstrate the relations of pathology to biology. All the facts and recognized principles of pathological anatomy are based upon general anatomy, just as those of pathology rest upon general physiology. Thus medicine, the medicine of the future, is fast coming to that state of promise when its foundations shall be as sure as those of the science of life; and the reproach uttered by Cruveilhier acknowledged to be undeserved, for it will no longer be true, that *il n'y a d'autre calcul possible que le calcul des probabilités.* The most hopeful would undoubtedly confess, however, that many questions presented to the student of medicine must, from their very nature, forever remain without positive solution.

As there are different ways of practising medicine, so are there various modes of studying the science, which is the living spirit of the art. When we give advice, we say: at the beginning let every one seek out and take to himself a stock of *good definitions.* Many a man goes the wrong way on account of a bad definition working in his head, and quite as many go without persistence or certainty, because they have no definitions and never had any, and have never found out that they wanted any. A beloved preceptor, ever to be remembered with reverence, was accustomed to say, when you get a new book, read the *Preface* and pick out all the plums of definitions, for they give the flavour. When you have the definitions look for the classification, and then you have hold of your man, and you know at once whether you can get on together, and if it will be of any use to seek a more familiar acquaintance. But avoid the mistake of Pinel, who, while he believed justly in a good classification and thought that a correct nomenclature would accomplish the perfecting of medicine, was not careful of his facts, but, as Louis asserts, trusted to his young pupils for the collection of them. Whether the proposition, *la médecine est tout entière dans l'observation,* be accepted or not, the following one is indisputable: *L'incertitude des connaissances médicales tient à la fois à une observation imparfaite des faits particuliers, et à la manière non moins imparfaite dont ceux-ci sont étudiés.*—(Louis, *Mém. de la Soc. Méd. d' Observation.*)

We ask, then, at the start, for good definitions. Those who write books on pathological anatomy must expect to be catechized on first principles. The student comes up and he wants to know, he persists; and so we interrogate the teachers. We ask them, before we care to hear about the effects of the dead man, what is *life,* and what is *death,* and what are *health* and *disease?* It can be seen at first glance that this departed person has gone off and left his cadaver with, perhaps, a tumour on it about the size of a cocoa-nut, and of the consistence of white-oak cheese. But that does not tell us the half; and is, in truth, a very useless piece of intelligence if we do not associate with it an immense amount of other intelligence. The tumour is not the disease, nor does it tell much about its antecedents, nor does it more than hint at all the consequents of the disease. But this is such a palpable truism that one need not utter it if it were not also just as true that most books on pathological anatomy are deficient in that *amount of other intelligence* which everybody sees is essential and needed, but which nobody, in the ranks of the *pure and simple pathological anatomists,* seeks to supply. To look at that man's cadaver and his cheesy tumour with persevering penetration will not enable us to persuade the next man not to leave his cadaver in the same way. We fear there has been a fearful waste of material in this cutting up business. Cutting up must be done. There can be no getting at the truth in a cytoblast without cutting up. But let it be done with the expectation of finding only the coarse and *altered* illustration of a small part of the complex processes which preceded death. Some teachers of pathological anatomy have wofully misled their pupils by pictures of disease, which have only the outlines of morbid specimens for their frames. There is a science of diseased anatomy which is a part of the foundation-structure of medicine, but its investigations are commenced upon the living body. Many acknowledge this in the abstract who write as if they never thought of it. In fact, the scholastic style of the lecture-room is not a whit better. So that the student, who does not have the chance to change off at the clinique his second-hand stock of notions obtained from the anatomical pathologists of the college, gets a wrong start in life. He may gaze at highly-coloured plates, and bad smelling specimens in transparent jars, and think he sees there the inheritance which falls to all flesh, disease itself, body and spirit. So that he secure the pearl what matter how the oyster sickened! He starts up, and hunts out quantities of monstrous specimens and rarities, and does not find out that they may be worth to him no more than so many coffins, till the granting of a license to practice medicine lets him down to the clinical common places, which pathological anatomists, by profession, have either ignored or shown to him through a darkened glass, darkly enough. He has groped "with greedy hand for treasures, and exults at finding earth worms." Instead of the animated nature, he has, like Faust, "naught around him but beasts' skeletons and dead men's bones in smoke and mould."

These anatomists are like some numismatologists. One man finds pleasure in collecting, polishing, and arranging all the medals of all the ages. But though he should find them all, and know them all by sight, and call them all by name, put each one into its own place; though he should measure, and weigh, and value, and burnish all the coins of every die, they might be of no more worth to him than so much brass. Let him read dates and inscriptions with all pedantry, his cabinet would be only a junk-shop, if each little medal did not teach him whole chapters of history, facts, and philosophy, poetry, and the arts of war, designing, engraving, die-sinking, in a word, the genius of the people whose signum it has been.

What a pity that dead men tell no tales. Hollow skulls are supposed to have said something to St. Jerome, and to Oken and Owen, but, in some company, they are as silent as they are sightless. An anatomist has a skeleton in the house, and a vitalist is overrun with spirits. Each of them has effected λύσις και χωρισμος ψυχῆς ἀπὸ σωμὰτος, but neither has a *man*.

The basic-idea or philosophy of Dr. Gross's *Elements of Pathological Anatomy*, is plainly enough indicated by the following passages which we pick out from their contexts, and expose as independent propositions:—

I. "*All organic diseases, whatever be their seat or extent, are the result of inflammatory action.*"

II. "*Every inflammation, irritative or morbid action, is originally of a local nature.*"

III. "*It may be doubted whether under any circumstances there can, strictly speaking, be a functional disease without some change in the anatomical elements of the part.*"

It is our purpose to present a detailed exposition of these axioms as they have been applied by Dr. Gross to the different organic lesions and elements of disease in their author's own words, and in accordance with his arrangement, as far as is possible. The plan of his book consists in the consideration of the general principles of pathological anatomy, including inflammation, transformations, tubercle, cancer, &c., occupying the first two hundred pages; followed by a very full and satisfactory application of these principles to all the organs and tissues, beginning with the blood and proceeding from the cellular tissue through the muscles, bones, &c., of the adult to the placenta of the fœtus..

The completeness of this work, as regards the subjects treated, is especially admirable. But, *en revanche*, many subjects are necessarily slurred, and some but dimly hinted at. It is, in short, as encyclopædic as the lectures of a practised, popular, and fluent professor of surgery are likely to be. It is like reading a dictionary or gazetteer. The time has gone by when one man can be competent, or live long enough to travel all over the medical cosmos and describe its wonders in one volume, even though the book pretend only to treat of elements. By elements should be understood first principles—and not a catalogue *résumé* of the titles in brief of all the remarkable facts and phenomena that ever were heard of. We might as well expect to enjoy the scenery of a country by reading a conveyancer's abstracts of titles to its real estate, as to find substantial profit in such compact enumerations of anatomical splendors.

The book is opened with a short and general review of the facts of normal anatomy. These opening paragraphs, brief as they are, we find to be characteristic; being shaded by a dark hue of materialistic, or rather mechanico-organic morbid anatomy, which we enter protest against here in advance.

The human body (chap. i. p. 33) is composed of solids and fluids. Of the fluids the blood is the most important, although Dr. Gross does "not feel disposed to attach that great importance to it which the advocates of the old humoral pathology did." The solids consist of tissues, which, combined in various ways, constitute the organs, whether parenchymatous, *pulpy*(!), glandular, or erectile.

Connected together by vessels and nerves, as well as, *in some instances, by continuity of surface*, there subsists between the various parts of the body, the closest *fellow-feeling*. After allusion to various examples of "sympathy," our author continues: "I have thus briefly adverted to the relationship subsisting between the principal organs of the body, and endeavoured to account for it upon *anatomical* principles." One might as well attempt to explain on known anatomical principles the contractions of the uterus after nine months' gestation, or the evolution from a Graafian vesicle once in four weeks. No hint is here given of an incipient conception of the idea of an unseen pervading power or property, which makes of a community of molecules, of myriads of active agents, having a certain independence, a single larger being of a compound and complex organization. But as the author doubts whether the discussion of this subject (sympathy) would result in good, we proceed, objecting here only to the *dictum* which he throws in as a plea for evading the question. He says: "What is most worth knowing is soonest learned and least subject to dispute." Then have nurses and practitioners of the *routine* school the advantage over those who practise experimental physiology, and study the general laws of life. The statement would not be seriously noticed, if it were not apparent throughout his book, that Dr. Gross attaches an exaggerated importance to the outside and measurable characters of morbid specimens, and undervalues to the same degree, or ignores the subtle impalpable psychological influences which really give the character to a particular disease. Do not the anatomical characteristics of a local manifestation of disease vary with its diathetic character? Are ordinary pneumonia, an inflammation of the lung from a fractured rib, and an inflammation of the lung preceding a manifestation of gout in the limbs, to be described as identical? Taking a step backward, let us inquire with Dr. G. "what constitutes disease, for everybody knows what is meant by health"—excepting those, we may interpolate, who agree with Vogel, that "*il n'y a pas d'organisme humain qui offre l'ideal de la santé dans toute sa perfection.*" * * * * (*Jourdan's Trans.*) Disease may be defined to be a departure from the sound state, whether this departure consists simply in a derangement of function or structures." [That is brief and clear.] "So long as the solid and fluid materials of the body act in concert, health must be the result, but *when the blood and the tissues are arrayed as it were against each other, there is disease.*" We have heard of disturbances of molecular attraction, and perversion of nutrition, but the latter part of this definition bears more resemblance to the following, taken from a recent work on General

Pathology. "Disease is a common accident, appertaining to the organization, which, like the words *life* and *health*, is altogether indefinable."

We are curious in matters of definition, and enjoy a good one; we shall put this in our collection. From a recent work on Pathology we extract the following definitions *de la maladie*, as illustrating the philosophies of medicine that have had sway, and the oscillations of the sacred faith from the vitalism of Sauvages, in whose eyes a malady was the "reaction of the interior *vital principle* against deleterious agents," to Buffalini's materialism, which held disease to be a "change in the material condition of the body."

Thus we have at hand an epitome of the history of medicine, from Van Helmont, who saw in *disease* only the results of disturbances occasioned by the grand *Archæus* (a puissant dignitary who held court-chambers, in the neighbourhood of the cardiac orifice of the stomach) all the way down through the ages to that dreadful field where the tissues find themselves pitted against each other in bloody array. [Gross, p. 36.] But in our retreat to quieter times, we learn that Hippocrates considered disease to be the sum of phenomena, resulting from the reaction of the *conservative principle* of the organism against an impression of evil or injury.

Stahl was of the same opinion, for he defined disease to be an effort of the *anima* to re-establish an equilibrium of the normal functions, and to expel injurious agents.

Sylvius de Libaë, professor at Leyden about 1650, told his pupils that disease was a simple lesion of the functions of the living body.

Sydenham believed disease to be an effort of nature, set up for the patient's relief, and the destruction of morbific matters.

Frederic Hoffmann (Halle, 1660 to 1742) called maladies efforts or struggles with death—*conatus moriendi.*

Brown, the man of "*Excitability*" (1736 to 1788), thought that disease should be treated as a "painful, difficult, or irregular exercise of one or more functions."

Reil, J. C., Professor at Berlin (1759 to 1813), regarded disease as a "peculiar action of the organization which replaced ordinary operations when disturbed by unusual circumstances, by an operation altogether new."

Broussais' famous dictum was to the effect that disease was nothing but the effect of functional irregularities.

Cayol taught that disease was a *function*, destined to react against disturbing causes and the destruction of the living body.

Dubois d'Amiens (Sec. Perpetuel de l'Académie de Médecine) proclaims that maladies are lesions of innervation which produce secondary organic or structural lesions.

We have thus founded a formidable opposition to the doctrines of the material localization of diseases, whose advocates, however, make a fair show of hands, stretching from the earliest times to this present day.

Asclepiades (about B.C. 70) heads the list, with the doctrine that disease is an unnatural state produced by the irregular *motion* of the *atoms.*

Themison found in all maladies only tension or relaxation of the *fibres* of the body.

Galen, with a sharp insight, but inconsistent rhetoric, endeavored to explain how disease had its point of departure in a structural lesion, although no disease could really be said to exist except in a lesion of function.

For another, "disease is a peculiar state of the body resulting from a superabundance or from a deficiency in the *quantity of fluids*, or some change in their relative proportions."

Frederic Hoffman described disease as being a disproportion or irregularity in the natural order of movements, whether general or partial.

Among the aphorisms of Boerhaave we find this: Disease is a structural change which deranges the vital, natural and animal functions.

From Fernel we learn that disease is an alteration of the blood, humors, or spirits, which occasions structural changes.

It may justly be said that these definitions render no account of the numerous *dynamic* maladies which present no demonstrable alteration of structure or modification of fluids.

The following are representatives of the compromising *organo-vitalistic* doctrines which include in their definitions both *the dynamic elements and the material elements of the organization.*

Gaubius, of Heidelberg, 1768, taught that "*disease* was a condition of the living body, which prevented the exercise of those functions which were proper to a state of health."

Chomel covers broad ground when he says *la maladie est une altération notable survenue, soit dans les dispositions materielles des solides ou des liquides, soit dans l'exercise d'une ou plusieurs fonctions.*

Andral describes disease as an alteration of the constituent parts of the body and of the functions appropriate to them.

Bouchut defines with brevity, "diseases are transformed impressions." A disease is then a disorder of the forces and of the parts of the body, and of the functions local or general.

As a knowledge of disease implies a knowledge of health, so Pathology implies a knowledge of Physiology and Pathological Anatomy, which treats of all the disorders of which the organization is susceptible, from the immediate principles to the organism considered in its indivisible totality, and involves an acquaintance not only with (*a*) Anatomy, (*b*) Physiology, but also with (*c*) the science of *Media*, or the external agents which surround the body, and influence its functions—

Wer sie nicht kennte
*Die elemente*
Ihre kraft
Und Eigenschaft,
Wäre kein meister
Ueber die Geister.

To gain the knowledge of the earth, one man walks all over its surface, and another bores Artesian wells; but when they have done they must both go to the dog-star to find out the secret of this little ganglion of the universal solar plexus—they must study through the great and little world. Some one has said, "For the phenomena of life, we want the whole concourse of nature." The pathologist, who only interrogates death for what can be learned concerning *life*, must be prepared to range over the whole circle of the sciences. What is life? Says one, "Life is the sum of the functions by which death is resisted." The metaphysician sees in life "the result of organization." For another mind, life is the principle of individuation.

The definition accepted by the school whose characteristic views we are endeavouring to represent, is the one proposed by De Blainville, as follows: "*Life is the twofold internal movement of composition and decomposition, at once general and continuous.*"

"This," says Comte, "is the only definition capable of fulfilling all the multifarious conditions required. It presents the exact enunciation of the sole phenomenon rigorously common to the *ensemble* of living beings considered in all their constituent parts, and in all their modes of vitality.

A man, sick or well—which qualities are only relative—is to be considered with regard to his *static* and his *dynamic* condition; all his organs, all their actions or properties, and all the media which surround and affect him, are to be known.

The English school was at one time looking at this matter of "the surroundings," as those who remember Connelly's lectures in London must be aware. But the microscope has now made everybody near-sighted, and in setting them at little things, has let them forget the greater. But that is not the fault of the microscope, as it is not a fair charge against the speculum that men endeavour through it to cure a general disorder by the topical application of the solid stick.

What, in life, is disease? It is not merely organo-pathic states, which can be materially appreciated by the senses—but these and something more; these are material effects, or rather a part of the chain whose beginning attaches to a primal disturbance of the forces which preside over the growth and development of individual anatomical elements, and binds them into a complex unit.

The assertion of Agassiz is undoubtedly true, that the most complicated combinations of structure and adaptations can be rendered independent of the physical conditions which surround them; but it is also true that in their progress towards a state of toleration of their new circumstances, especially if the change be sudden, they are likely to present temporary manifestations of disease. It is curious to note here the illustration to the statement that Pathology is following in the footsteps of Anatomy, but afar off—so far behind, indeed, that the latter has forsaken a stand-point just as the former arrives on the ground. Thus Agassiz (*Contributions to Nat. Hist. of the U. S.*, vol. i.) announces that to assert the dependence of structural peculiarity upon climatological conditions is an unsound dogma, just at the time when pathologists are beginning to question the *media* with more rigorous severity as being among the chief causative elements of disease.

Pathological Anatomy cannot be separated from Pathology, and Dr. Gross has not succeeded in divorcing their union, though he seems to have tried with intermittence. Pathological Anatomy, in the narrow and limited sense in which it is taken by some writers, is rather a subject for iconographic representation than for verbal description.

Following our author, we come now to the consideration of the chief of all the morbid actions, *inflammation.* We call this the chief, as does Dr. G., but it seems to be implied, in some parts of the book, that inflammatory action is the only morbific action; that inflammation is, in fact, the only disease.

This opinion differs so entirely from our own, that we would prefer to expunge the word altogether from the medical glossary, or limit it within the bounds to which *fever* and *irritation* have been reduced. If inflammation means everything, it describes nothing; and is of no more utility as a means of *defining* a state or result, than is the word *disease.*

The difficulties of expressing a correct definition of inflammation are recognized by all recent writers, and specially noted by those who use the word with restrictions. But neither *stasis* nor *hyperæmia*—words suggested as synonymous with inflammation—express all the phenomena belonging to that complex disturbance of functions, and alteration of structure, recognized as inflammatory. As we have said, we do not like the word inflammation, and would be glad to find good substitutes for it; but there are very many objections to pulling out a word so firmly fixed as that has become. We do not like it, because it is suggestive of a uniformity and identity of processes and results in connection with phenomena which have no common essentials. Wherever it is possible, let there be used specific phrases which indicate with more exactitude the particular constitutional or general element—as whether (*a*) inherited or acquired; (*b*) its dyscrasic character—scorbutic, syphilitic, scarlatinal; (*c*) the locality; (*d*) the results—as exudations, softening; (*e*) associated disturbances of function.

It is not proven, nor is it probable, that a phlegmasic process arising from an internal cause, bears any resemblance to an *inflammation* produced artificially. A drop of cantharides and a tadpole's tail cannot, by any possible conjunction, enlighten us on the subject of mumps, lung-fever, or boils. Everybody agrees to that, even those who go on in the classical way, talking about redness, heat, pain, and swelling. The reformation of nomenclature will lead to more truthful and exact notions of the phenomena if expressed in scientific terms of definition. For some maladies and classes of disease, the change has been already effected. Thus, we do not lump together herpes, pemphigus, psoriasis, and porrigo. The ignorance or carelessness of designating a *squamous syphilide* with so little nicety as to call it an inflammation of the skin, would be considered quite inexcusable; but no more nicety is shown in the designation of the great majority of similar internal manifestations of disease which are all called by the generic name inflammations. What essential resemblance is there between gonorrhœa and bronchitis? The indetectible poison of the one and the butyrates of the other, are alike overlooked by those who see in these diseases only examples of common inflammation of mucous membrane. A gouty enlargement of a great toe, and a whitlow of a finger phalanx might, without inconsistency, be regarded by some pathological anatomists as effects of identical processes; but in real differential characteristics they are as far apart as are the two extremities of the body. The whole of rickets is not told in Virchow's masterly description of softening bones; dysentery is not merely an inflammation of the lower bowel; cholera infantum is more than an inflammation of glandules in the small intestines; and just as epidemic catarrh is more than an inflammation of the faucial and bronchial mucous membranes, and typhoid fever more than inflammation of Peyer's patches, so is intermittent fever more than inflammation of the spleen, and the cerebral disturbances of scarlet fever more than intra-cranial inflammation. Everybody says amen—but in everybody's books these simple truisms do not appear with the emphatic distinctness which they might claim; and by such faults of omission and commission of the treatises which should give sound principles, and ready method rules for the prompt and intelligent treatment of the sick, but do not give them—by such faults, the student finds his unsound principles as much in his way when he comes to sit down at a bedside, as a long broadsword would be.

It is because we are ill satisfied with the imperfect teachings, and fear the dangerous errors of classical morbid anatomy, that we do not share Dr. Gross's regret that in the forty-five medical colleges of the United States, there are but few chairs of Pathological Anatomy; and we certainly cannot regard this destitution of our schools as attributable to a "strange and culpable oversight." Let us have all the Professors of the Theory and Practice of Medicine which the number of students in each college may warrant—and as no one man can have time, strength, capacity or cultivation to teach the whole science well, let there be special teachers of special branches; and let each one begin at the ultimates, and make a complete development from the radicles of physics to the efflorescence of vitalistic speculations.

Some of the best expositions of Pathological Anatomy extant are contained in clinical lectures on special subjects; and this is the way we desire to have medicine taught, with its anatomy, pathology, and therapeutics of special diseases simultaneously presented.

The lectures on special subjects in the hospitals of our large cities do more good to advance Pathological Anatomy than chairs of Pathological Anatomy or systematic treatises are likely to, for the reason that the former approach the subject from the right direction.

Towards the removal of erroneous and imperfect notions of morbid processes, much progress would be made by a *reformation of nomenclature.* Very simple terms may be used. In these anti-classical times it is not worth while to dig with Piorry too deeply for Greek roots. Let there be, as far as possible, a plain statement of the organic changes and vitalistic disturbances. For *inflammation*, substitute in most cases the word *disease*, and express, after the various localities have been mentioned, the specific process, whether simple or complex, as exudation of lymph or serum, &c.; with the qualification then of the peculiar dyscrasic condition, as scorbutic, diphtheritic, scrofulous, and their mutual relation to the derangements, as primary or secondary. We shall have, in most cases, not only a plain scientific designation of the morbid processes, but also such a full description of the case contained in the enumeration of the elements of the disease that very little more need be added in reporting cases to render them fit to be tabulated. "We may learn the essence from the name."

The following case may illustrate the design of these remarks.

A middle-aged lady, with a solid ovarian tumour of many years' growth, had a chill when resting by an open window after a brisk walk. She considered herself in full health at the time, and was so in appearance. She had the same day pain in the abdomen, followed by constipation, which lasted eleven days; then a low form of fever for six weeks without disturbance of the bowels, and without any marked symptoms except watchfulness; then repeated chills, or chilliness with imperfect reaction for two weeks; a cough for two days; dulness on percussion of right side and entire absence of respiratory sound for one day, at the end of which abundant sweating, failure of pulse, and death.

Post mortem examination revealed superficial layer of fat, thick; bed-sores partially healed; right side of the thorax full of water, clear, without flocculi; pleural surfaces clear, shining, smooth, without redness or adhesion; no vestiges of false membrane anywhere; every other part of the body healthy in appearance except pelvis and lower part of abdomen; here was a tumour weighing ten pounds, twisted on its ligamental attachments, so that its veins were compressed and its surface mottled with distended vessels. A knuckle of intestine had been compressed by false bands, but had got loose. There were no signs of secondary exudative processes about this tumour, excepting for the space of one inch in a large vein on its surface, where there was a red coagulum with thick creamy looking fluid. From the Fallopian tube of that side a little muco-purulent fluid oozed out.

What was the disease, and how to express it? Ovarian tumour; arrested transpiration of skin; disturbance of bowels; strangulation of intestine; hyperæmia of tumour; suppurative disease of vein; pyæmia; hydrothorax—this enumeration is needed to give a name, but its titles, like those of some other things, include all there is of it. It is interesting to notice that one of the obvious and striking phenomena here for the anatomist, viz., dropsy of the chest, did not occur till within the last two days, and was not accompanied at the time of the examination by either redness, loss of polish, or fibrinous exudation of the serous surface. The classical signs were wanting, excepting hydrothorax, and this, according to Laennec and Forbes, if it were not an inflammatory production, was indeed a rarity. There are many cases in which, as in this just described, there are several associated phenomena, primary or secondary, which pathological anatomy should make note of, if it can offer no explanation of the alliance. For example, the spanæmia, hysteria, and disease of glandules of fauces associated with induration and ulceration of the os uteri. If it cannot explain or does not try to explain the association of redness of the eyelids with spermatorrhœa; the occurrence of itching of the nares from intemperate coitus, or the occasional dependence of intercostal submammary pain upon tobacco poisoning, and scores of acknowledged but unseen bonds of union, it must be warned not to promulgate such false principles concerning the uniform character of inflammation and the universality of its presence at the bottom of all morbific actions, as to mislead in regard to the diagnosis of such consociations and their consequent treatment. It must not by any representation concerning inflammation teach us to treat a rheumatic disease of the eye as if it were catarrhal. Nobody means with deliberation, to face out blundering of that sort, but such instructions are sometimes given unwittingly, and rather by implication than by downright statements to the same effect.

* * * *

But to proceed, under our author's guidance. In the general exposition of inflammation, Dr. Gross makes a very clear and comprehensive statement of most that is known to be "real and substantial" in regard to the progress, intensity and mode of termination of this disease. Under the head of Etiology, the modifications associated with temperament, age, sex, habit, climate and season are considered as well as the specific characters in relation to the textures affected, and the predisposing cause.

Under the head of *Phenomena and Nature of Inflammation* the signs usually enumerated as marking inflammation—discoloration, heat, pain and swelling are mentioned at some length, and Dr. G. remarks that "they are not always present, nor are they the only circumstances which occur in inflammation in this disease: [what disease?] in every case there is a perversion of the vital actions attended with an altered state of the nutritive and secretory functions:" and our author continues, "if we regard these four phenomena as essential to the process there can be but few inflammations." We must therefore invoke other names, such as *irritation* and *fever*. But Dr. G. objects to these words because "they do not describe the peculiar conditions of the nervous and vascular systems. Yet men continue to talk about irritation as if they had the most perfect knowledge of its seat," &c. If he had included inflammation in this indictment it would have been no injury to the cause of justice.

In speaking of *temperature* reference is made to certain experiments of Huber, Dunglison, Everard Home and Hunter, tending to demonstrate that the temperature of an inflamed structure is higher than that of the blood. But no reference is made to Bernard's experiments or Brown-Séquard's statements. When speaking of pain Dr. G. says: "The degree of *suffering evinced by the mucous membranes*(!) in a state of inflammation is subject to much variety, which may be perhaps explained by the fact that while some portions are supplied by the ganglionic system, other parts derive their nervous filaments chiefly from the cerebro-spinal axis." Many examples are given of "perverted vital action" and altered function, which are well enough put; but we should like to ask if those who have followed our author do not find enough, in addition to the evidence which the preceding descriptions furnish, to convict this inflammation of false pretences and have him banished forever—for he is indeed a bad fellow—a consumer of nutrient substances, and an incendiary. But he pretends to light fires for household economic purposes—to cook, to prepare nutritious materials, to heat glue for adhesion, and generally to repair damages. He deserves no such credit: there is a great amount of reparation going on without his assistance. The fact is, whatever he undertakes to do he damages. But, on the other hand, he is not to be made a scapegoat of. There is a deal of mischief done when he is not by.

In considering the seat of inflammations, the state of the capillaries, altered absorption and nutrition, the relative agency of the vascular and nervous systems, good use is made of the published investigations of Virchow, Henlé, Bennett, and Wharton Jones. What is known from them is compactly and circumstantially stated.

Dr. G. still hangs on to the *terminations*, but we are disposed to cut them off altogether. Instead of saying there are seven terminations of inflammation: 1, resolution; 2, effusion of serum; 3, deposition of lymph; 4, suppuration; 5, hemorrhage; 6, softening; 7, gangrene; let these phenomena be described with all the minuteness possible, as so many manifestations of *disease.* It does not assist us to their better acquaintance to call them inflammation—and destroys the chance of standing upon a common therapeutic basis. How much better, said Bichat, "inflammation terminates by, 1, resolution; 2, repercussion; 3, suppuration, or by other diseases.

Following Dr. Gross's classification we come to—

*Effusion of Serum.*—Dr. G. doubts whether œdema or anasarca occur, without inflammatory action, and reasons in this manner (pp. 61, 62): "It is frequently extremely difficult to ascertain the condition of the seat of the effusion by anatomical inspection. In ascites, how often does it happen, that there is the most copious accumulation of water, caused *obviously by inflammation,* and yet, on examination after death, there is scarcely a single trace of the latter malady. The absence of redness does not prove that there was no inflammation, for the discoloration with other signs often vanish, just before death. Effusion from mechanical obstruction cannot exist without producing a state of parts *analogous* to" (*what state is then analogous to, and yet not inflammation?*) "if not really identical with inflammation. But it may be said, that the effusion may result from perverted action, from irritation or distended function, all this may be true and yet not in the least invalidate our position. Everybody knows that in inflammation there is perverted action, or deranged function with irritation or altered sensibility." Poor reasoners—like good navigators—stick to the great circles. Once more he says: "In the same manner, hydrothorax is sometimes induced by tubercles of the lungs; hydrocele by carcinoma of the testicle; hydrocephalus by heterologous growths of the brain. In all these instances, effusion of water is the result unquestionably, of inflammation lighted up in the serous covering of the respective organs by the morbid deposit acting as a foreign substance." In whatever relations the morbid deposit and the inflammation may stand to each other, we would rather regard the diathesis which has produced the solid growth to be a good and sufficient cause, proximate and remote for the dropsy. And again: "The dropsical accumulations which supervene upon scarlet fever, measles, and other eruptive diseases, can be traced in most cases directly to *phlegmasial irritation* of the serous membranes." We think this bad pathology which would be likely to eventuate in worse therapeutics. The convulsion, coma, sore throat, desquamative disease of kidney, albuminuria, and dropsy of scarlet fever, are no more the signs of local inflammation, or any such process, as the frozen ear of a rabbit illustrates, than is the scarlatinal redness of the surface due to an inflammation of the skin. We would not call a variolous pustule an inflammation of the skin, though Piorry says it is nothing but an abscess. But the definition of inflammation which really *defines*, is to be the work of the Coming Man.

"*Lymphization.*"—A term not found in any other pathological treatise, as Dr. Gross confesses, is the heading of another chapter. The effusion of fibrin is invariably of inflammatory origin, and is often the only sign of inflammation existing after death. Lymph is defined by Dr. Gross as a vital organizable substance separated from the blood by a process of secretion. It does not always exhibit the same appearance. When first exuded it is semi-liquid, but its consistence thickens, and it may become organized and transformed into tissues. An excellent description of the microscopic appearances is given (p. 64). Of the inflammatory globule of Gluge, it is said that it is not confined to inflammatory lymph. Mention is made of Rokitansky's divisions into *croupous* and *plastic*, and Paget's into *fibrinous* and *corpuscular*, and the various intermediate varieties, but no allusion is made to Virchow's admirable researches on the nature and properties of fibrin, contained in various papers published since 1845. An omission somewhat remarkable in this connection, inasmuch as this subject has been for some time regarded as the specialty of the Würzburg professor.

"The chemical composition of lymph proves it to be similar to the buffy coat of the blood. It is effused under a considerable variety of *forms dependent upon the shape of the part which supplies it.*" This is a variation of form which is not of the slightest consequence. Concerning the rapidity of the formation of the plastic exudation, Dr. G. says it may form within an hour and to a considerable amount in four hours, and a case is given in illustration. Lymph tends to become organized, and becomes supplied with vessels either by the vessels of the *natural* tissues shooting into it, or spontaneously by powers residing within itself.

This process is traced up, to the development of fibrous tissue, with the aid of figures of cells and fibres, after Bennett.

"Plastic lymph organized, forms the basis of all the analogous tissues and the bond of union of divided parts. It may become the seat of inflammation both acute and chronic, pour out serum, lymph, pus, and even blood; and undergo the same transformations precisely as the natural textures. It is, likewise, the source of what is termed induration, and probably, also, in a modified form, of scirrhus and tubercle." These statements are like many other wholesale statements. They contain a great deal of verbal outside fact with a little inner falsity—just enough to spoil them and make them dangerous.

"The *analogous* tissues, formed out of the plastic element of the blood, are nearly as numerous as the *natural* tissues; thus, cellular, serous, mucous, cutaneous, vascular, adipose, horny, epidemic, fibrous, fibro-cartilaginous, cartilaginous, osseous.

"Coagulating lymph performs a conspicuous part in the reunion of divided parts. Without its agency, ulcers would not heal, and fractured limbs would dangle about "in wild uncertainty." By this is produced union by *adhesive inflammation*. What should we do without it? It is to be hoped that we are all in a comfortable state of inflammation. If so, we are as well as could be expected.

It is our belief that the term *adhesive inflammation* does not express a fact.

*Suppuration.*—"This is the third mode by which inflammation *relieves* itself. Pus is never deposited where there is an entire absence of inflammation. A cold abscess is the result of inflammatory action quite as much as a phlegmonous boil is. Pus may be formed without a solution of continuity. It is found much more readily and abundantly in organs which contain the largest amount of cellular substance."

This is all very well, but hardly serves as a fit introduction for an article on suppuration, which is intended to be up flush with the times, and so placed as to reflect the light which Vogel and Wedl have shed on this matter. What follows is much better. The consideration of abscesses, and especially the paragraphs which treat of the nature, varieties, and tests of pus, leave hardly anything to be said. This chapter resembles some others in being extremely unequal in style and scientific method.

Chap. V. *Hemorrhage.*—There can be no doubt that this chapter is entirely out of place in occupying a position between suppuration and softening, but we defer the suggestions on classification which we wish to make to another place. After noticing the uncertainty of our opinions on this subject, Dr. Gross remarks that, formerly, the idea prevailed that all sanguineous effusions depended upon rupture of bloodvessels; and adds, nor is this notion yet eradicated from the minds of some. It is not to be denied that most of the good books recently published give evidence that such an opinion is by no means entirely eradicated from the minds of the best pathologists. Our author has no faith in exhalants, and devotes to these mythical structures a paragraph or two. But he believes that the capillaries, being in a state of debility and relaxation, have their pores rendered unnaturally patulous, and thus allow the blood to have a more ready egress. *Relaxation* and *Pores.*—"It is precisely where meaning fails that a word comes in most opportunely." This process takes place within the limits of health (it is gratifying to know that there is something that can take place within the limits of health), as in the uterus where it constitutes the *menses.* The other subjects treated of in this chapter, are the liability of different structures to hemorrhage, the causes, the effect of inheritance upon it, vicarious hemorrhage, and the classes into which hemorrhage may be divided. Under the head of changes in the effused blood, it is said that the blood may be rejected, absorbed, may remain and become organized, or may act as a foreign substance and produce fatal inflammation, and, finally, may undergo various changes in colour and consistence. This is an interesting subject, and entitled to longer consideration. That effused blood ever becomes organized may reasonably be doubted.

*Softening.*—"One of the most *singular* effects of inflammation. The term is synonymous with that of *mollescence*(!), so much in vogue among the French pathologists. All parts are not equally subject to it. The particular anatomical element in which the changes are most marked is the interstitial cellular. Cadaveric softening may induce mistakes. Its differential characteristics are not, however, given in this place. There is a species of softening in the nervous centres dependent upon closure of the arteries. This interruption of the circulation, however, interrupts nutrition; but it is not by any means clear that 'the changes which the organ experiences are not of an inflammatory character.' The bloodvessels in many cases seem to have entirely disappeared, whilst in others they are so weak as to be incapable of withstanding the slightest pressure or receiving the finest injection. There can be no such thing as dry softening."

Softening of the heart is well described. It may co-exist with phthisis, pleurisy, typhoid fever, or take place as an independent affection. The microscopic appearances are not given by Dr. G. The subject (softening) is one of very great interest, and deserves treatment at length, being, perhaps, the most common and widely distributed of all organic lesions.

The experiments of Hamont and Levret upon the blood in malignant pustules are spoken of. It may be mentioned, in this connection, that different forms of carbuncle and furuncular diseases with ecthyma have prevailed to an increased extent in some of the large cities of this country during the last two years. And it has been pretty well established, that Dr. Locock's opinion concerning their contagiousness is founded on fact.

*Gangrene* from ergotism is treated at some length. Of the modus operandi of this agency we are ignorant. It probably affects first the blood, and then "the capillaries, causing inflammation in them followed by gangrene—the nervous system is, no doubt, also seriously involved; all that is contended for, is, that these are the parts which receive the primary impression whatever that may be." The scepticism which calls this agency in question is very reasonable.

*Ulceration* may be defined to be "the molecular death of a part." "Of the intimate nature of this lesion nothing is known, with any certainty, beyond the fact that it is essentially connected with inflammation." "The cutaneous, mucous, and cellular tissues are much more frequently affected than all the rest put together. This is well exemplified in the numerous *blotches* which so often cover the body, and in the erosions which are so frequently noticed in the bowels, mouth, throat, vagina, and larynx. The liability to this affection varies very greatly even in parts of the same structure; thus, 'for one erosion of the stomach we find at least a thousand in the ileum.' "

"Ulceration always manifests a tendency to extend towards the nearest surface." The great *cause* of ulceration is inflammation conjoined with pressure. The caries of bones produced by the pressure of an aneurism "disproves the idea formerly so current that ulceration can never happen without the formation of pus."

What is the nature of the concomitant inflammation? The assumption is, that it is *specific*, that it is modified by circumstances, local or general, or both combined, which the pathologists cannot appreciate.

The subject of ulcers, in the second part, is excellently treated. But we think that Dr. G. seems to consider a collection of processes, or a compound one, as a single and simple one.

Ulceration may be a salutary process, a means employed by nature to rid the animal economy of extraneous materials, collections of purulent fluids, bullets, and tubercles. "In old drunkards it seems to be designed to relieve the system of hurtful fluids, by establishing extensive sores on the legs, attended with a perpetual *flow* of irritating matter. Thus we see that ulceration, although apparently a very unpleasant, is, in many instances, a most fortunate event, and one for which the practitioner often anxiously looks." This chapter, though containing many good things, is very imperfect.

*Granulation.*—"This process is one of the grand operations employed by nature for the cure of wounds and the filling up of ulcers. A granulation is a vascular body, consisting at first essentially of coagulating lymph. In this an arterial and a venous branch—a *small nerve and an absorbent*, probably—are developed. It is thus an absorbing as well as secreting body, and performs the triple office of pouring out lymph, secreting pus, and absorbing such substances as are brought in contact with it. *The concomitant inflammation appears to be of a mixed character, as it is attended with the simultaneous effusion of lymph and purulent matter.*" We are getting befogged. This Proteus appears in more characters, on the same occasion, than the infant phenomenon—one kind effuses lymph and another pus. We had hoped that granulation would heal the old sore; we look hopefully at the next chapter.

Chap. X. *Cicatrization.*—"It is the finishing stroke, if the expression be allowable, of granulation—the labour necessary to polish the surface of the sore, to contract its diameter, and to bring it as nearly as possible to a level with the surrounding structures"—and it is expected to be up to the scientific level of the times.

"This process is not limited to the skin. The first step in the process of healing is the subsidence of the inflammation. The granulations contract and coalesce, the surface becomes smooth, the centre being depressed or elevated. The first evidence of real cicatrization is a thin pedicle along the breach where it unites with the old skin by an interchange of tissue, of vessels and nerves; and after the new organized deposit becomes thicker, and extends towards the centre by successive experipheral additions of new material."

Dr. Gross is convinced that ulcers and wounds never heal from the centre; that the process described is the only way by which healing can be accomplished, with the exception of large wounds, which have left little islets of sound skin.

"Are the original textures in the formation of cicatrices always regenerated? Cartilages and muscles are said to be the only *parts* not susceptible of reproduction. But even this is extremely doubtful. At all events, in most instances the reproduction is imperfect. There are no sebaceous follicles, and no hairs on new skin. Cicatrices are liable to inflammation, contraction, hypertrophy, and malignant degeneration."

*Induration.*—Increase of consistence may arise from the deposition of a new product, from a deficiency of the natural secretion, or the transformation of the elemental tissues of the organ affected. This excludes all the heterologous formations. "The causes are referable for the most part to inflammation *followed by* an effusion of lymph. In the lungs there is frequently, in addition to this, more or less blood poured out, which, combining with the natural structures, gives them a red colour. It is thus that *red hepatization* is established." "That induration is susceptible of being cured, daily observation abundantly testifies." No allusion is made to more than one kind of red hepatization, nor to any other, of Virchow's remarkable discoveries, in this direction. There is a pneumonia with granulations and a pneumonia without granulations.

Chap. XII. *Hypertrophy.*—The title of this chapter is provokingly suggestive of Mr. Paget's elegant lectures; but the merits of the chapter lie chiefly in the postscript—suggestive of quite another kind of literature.

Of the causes of hypertrophy some are general, others of a local character; of the former, very little can be said to be known. The local causes are chronic inflammation, mechanical obstruction, inordinate exercise.

Hypertrophy essentially consists in an augmentation of the nutritive function. The elementary particles are increased in number, or augmented in size. In that variety which results from chronic irritation it is not unlikely that there is often superadded to the alteration just mentioned a deposit of new substance in the spaces of the connecting cellular tissue, leading thus to a real change of structure.

This subject is very defectively treated, both under the head of General Pathology and in the detailed application to special organs and systems; for example, in speaking of hypertrophy of the uterus, all that we find are the following sentences: "Hypertrophy of the uterus, as a result of healthy nutrition, is very rare. The affection is usually most conspicuous in association with fibrous tumours, in which it is sometimes truly enormous. Thus, in a specimen in my possession the walls of the organ are nearly two inches in thickness, and of a firm, dense consistence, grating under the knife. Its cavity is of extraordinary size, and several small tumors are seen projecting from its outer surface. The hypertrophy is sometimes confined to the lips of the uterus, which, especially the anterior, become thick, dense, and stumpy."

We might reasonably expect, in this connection, a description of the coarse as well as of the microscopic appearances of this organ in the pregnant state.

Chap. XIII. *Atrophy.*—This lesion depends upon the imperfect exercise of the nutritive function. "General atrophy, commonly called marasmus, emaciation, or consumption, frequently arises from organic disease of the lungs, heart, and stomach, and from morbid enlargement of the mesenteric ganglions."

All animals have a period of growth, maturation, and decay. In senile atrophy the solids waste, and the fluids are changed in character. "The jelly which exists in such great abundance in young persons totally disappears in decrepitude, its place being usurped by albumen and fibrin."

The causes of local atrophy may be cessation of the function of the organ, diminution of the nervous influence, deficient supply of blood, and inflammatory irritation. Under the last head our author says: "The irritation excited by the presence of biliary concretions in the gall-bladder is sometimes followed by the complete wasting of that organ. Hepatitis often gives rise to atrophy of the parenchymatous structure of the liver; and orchitis, especially when supervening on mumps, is not unfrequently succeeded by impotence. How the lesion is produced in these cases it is not easy to determine. It is probable that the chief fault is in the *arterial capillaries*, which cease to perform their accustomed functions, and thus *allow the absorbents* to carry off more than the usual amount of organic matter."

Atrophy of the muscles, brain, uterus and mamma is well treated in each of the chapters of the special pathology devoted to these organs.

We make no apology for recalling to the minds of our readers the following extract from the writings of one of the most gifted men at present adorning our literature. When speaking of general atrophy he says—

> "It could not be without interest to watch the changes of the body as life naturally ebbs—changes by which all is undone that the formative force in development achieved; by which all that was gathered from the inorganic world, impressed with life and fashioned to organic form, is restored to the masses of dead matter; to trace how life gives back to death the elements on which it had subsisted; the progress of that decay through which as by a common path, the brutes pass to their annihilation, and man to immortality. Without a knowledge of these things our science of life is very partial, very incomplete; and the study of them would not lack that peculiar interest which appertains to inquiries into final causes; for all the changes of natural decay or degeneration in living beings indicate this design, that, being gradual approximations to the inorganic state of matter, they lead to conditions in which the elements of the body, instead of being on a sudden and with violence dispersed, may be collected into those lower combinations in which they may best rejoin the inorganic world; they are such that each creature may be said to die through that series of changes which may best fit it, after death, to discharge its share in the economy of the world, either by supplying nutriment to other organisms, or by taking its right part in the adjustment of the balance held between the organic and the inorganic masses.
>
> "Nor would the student of the design of these degenerations do well to omit all thought of their adaptation, in our own case, to the highest purposes of our existence. When, in the progress of "the calm decay" of age, the outward

senses, and all the faculties to which they minister, grow dim and faint, it may be on purpose that the spirit may be invigorate and undisturbed in the contemplation of the brightening future; that, with daily renewed strength, it may free itself from the encumbrance of all sensuous things, or may retain only those fragments of thought or intellectual knowledge which, though gathered upon earth, yet bear the marks of truth, and being truth, may mingle with the truth from heaven, and form part of those things in which spirits of infinite purity and knowledge may be exercised."

Chapter XIV. treats of Fistules, and is very much out of place between Atrophy and Transformations.

Chapter XV., Transformations. "The human body is incessantly undergoing changes by which the nutrition of its elementary constituents is modified until they are at length converted into totally different structures."(!)

The number of transformations is very small, and may be stated as follows: 1, cellular; 2, mucous; 3, cutaneous; 4, fibrous; 5, cartilaginous; 6, osseous; 7, adipose. Passing over the first four we come to the cartilaginous variety: it usually appears in the form of thin plates or nodules. The subserous cellular seems to be the texture the most liable to it. It occurs in the fibrous envelop of the spleen, in the placenta, the gall-bladder, cysts, adventitious membranes, &c. The new substance cuts precisely like a piece of costal cartilage, and passes, by insensible gradations, into the circumjacent cellular tissue, which is generally unnaturally thick and indurated. It is in reality devoid of all the elements of cartilage.

The most common transformation by far is the osseous. The new substance, which often bears but a faint resemblance to natural bone, is seen under three forms, the lamellated, tuberoid, and spicular; but in the majority of cases this so called osseous transformation does not present the usual uniform characters of true bone; it is rather a calcareous degeneration or a deposit of chalky particles, with an absence of the natural elements of bone. *Accidental ossification* is frequently witnessed in old age—the arteries, costal and laryngeal cartilages are thus affected. In other cases it is directly chargeable to inflammation.

"But the most remarkable transformation is the adipose, in which the tissues undergo a real fatty degeneration. In the majority of cases it is a true replacement of tissue by oil. By some the alteration is supposed to consist essentially in the superaddition of fatty matter to the existing tissues, whilst others consider it as the result of a true transformation." But no one, it is fair to suppose, who has read Quain and Robin, confounds these two essentially different processes.

How is it brought about? "In the human subject it sometimes seems to depend upon the want of exercise of the affected part. But are these effects really attributable to repose. Would it not be more philosophical to conclude that something was due to the want of nervous influence, and to the altered state of the circulation thence arising. Be this as it may, I feel disposed to think that the transformation in question is uniformly the result of a *low and imperceptible grade of inflammatory irritation*." This last sentence is not the only unsatisfactory part of this paragraph.

Under the head of "Pneumatoses, or Collections of Aeriform Fluids," is included the general consideration of pneumo-thorax, tympanitis, physometra, pneumo-pericardium, pneumatocele, emphysema, &c.

The causes are external injury, chemical decomposition, and true secretion.

The next chapter introduces us to the general subject of *Tumours*, a word which does not occur in the index of Dr. Gross's work, and is really an objectionable term; but its use may conveniently serve a purpose. Our author does not approach the subject as do those who have what might be called radical notions on the subject of new formation. He does not build up his classification on a foundation of the *nature,* nor yet on any other good basis. It is both faulty and eccentric.

Chap. XVII. *Polypes.*—We object that this word cannot properly stand for a class, as it relates merely to a matter of form, and may embrace every variety of tissue, homologous and heterologous. Dr. G. confesses that it is not very appropriate. After considering briefly the situation, number, size, and form, the author speaks of their structure. "In this regard polypes may be divided into four species, vesicular, fibrous, vascular, and granular. As to situation, it may be said in general terms, that the first variety occurs most frequently in the nose; the second in the uterus; the third in the rectum, ear, and vagina; and the last in the larynx and urinary bladder. These may all undergo the various transformations. *The fibrous is most liable to become carcinomatous.*" Is such a transformation possible under any circumstances? We do not believe it, if it is intended to convey the idea that *fibrous tissue* ever becomes *carcinomatous tissue.*

In regard to their origin polypes cannot be viewed, strictly speaking, in the light of new formations, but rather as the result of a species of hypertrophy of the mucous membrane. The development of the granular from mucous follicles is traced and compared to the formation of a cyst from the closure of a sebaceous follicle. All these varieties are covered by a mucous investment continuous with that of the canal, from which they have sprung. They possess arteries and veins. No nerves or absorbents have been detected in these excrescences, though they undoubtedly exist there.

*Hydatids.*—Dr. Gross divides them into 5 genera; 1, the cysticercus; 2, the polycephalus; 3, the diceras; 4, the echinococcus; and 5, the acephalocysts; they all consist of a thin pellucid vesicle, varying in size, which is filled with a clear watery fluid, and surrounded by a dense fibrous capsule, upon which they depend for their nourishment and support.

These are well described by words and figures. The origin of hydatids is involved in doubt. Recent researches tend to show that they are the ova of worms, probably of the tænia, which reach a certain stage of development, and then become encysted. The embryos of tænia have been seen perforating the intestinal walls, in order to reach the parenchymatous structures in which they were destined to become imbedded. Whilst the formative process is going on, the parasite takes care to isolate itself by means of a capsule. This capsule formed out of plastic lymph, is furnished with vessels, nerves, and absorbents; these are derived either from the surrounding textures, or are of spontaneous formation.

How are hydatids nourished? They are isolated by a capsule, which is lined by a thin, pulpy, fragile lamella, which Dr. Hodgkin supposed to be an excrementitious secretion from the hydatid, but which Dr. Gross believes may be an important structure designed to nourish the parasite. Some hydatids are short lived, and some last for years. They may die of inflammation terminating in suppurative gangrene.

This chapter, although one of the most thorough and complete expositions of the actual state of science to be found in the book, contains no notice of Robin's remarkable explorations among entozoa.

Serous cysts are often confounded with hydatids, but may be readily distinguished by the fact of their being all intimately connected with the parent sac, by the circumstance of vessels passing from one to the other, and by their not containing any parasitic formations.—[*Vide passim,* Robin and Paget, Simon, Johnson, and Budd.]

Chapter XX. *Heterologous Formations.*—This chapter, divided into six sections, introduces the subject of heterologous formations. This is by far the best part of the work we have as yet passed in review. Much of it is admirable in style, and it is well illustrated by wood-cuts, old and new. Most of the latter made from drawings by Dr. Da Costa, whose valuable assistance has received from Dr. Gross the credit to which it was believed to be entitled.

There are, however, in the following sections, many opinions and statements which may fairly enough be questioned. But, in accordance with the plan already pursued to this point, we prefer that our author should announce his ideas and fortify them in his own way.

*By the term heterologous are understood certain morbid products of a solid or semi-concrete consistence which have no resemblance whatever, or, at most, only a very remote one, to the natural, normal, or pre-existing tissues of the body. The number of these products is, probably, not more than six, viz., tubercular, scirrhous, encephaloid, colloid, melanotic, and epithelial. All the heterologous formations have one common property, they are all malignant, and tubercle is unquestionably the most malignant of all. Their origin is, probably, of an inflammatory nature, attended with an altered condition of the blood and an aberration of the nutritious function.*

Was there ever greater need of an Ashburton to settle boundary lines?

Section I. *Tubercle.*—In this section we find many well-arranged and useful facts. As in other parts of the work, the external qualities of the products of disease, including those ascertained by the microscope, are presented with marked fidelity and minuteness.

*Tubercle* is limited by Dr. Gross in its application to denote "a small solid tumour of an irregularly spherical figure, more or less opaque, of a pale-yellowish colour, seldom exceeding the volume of a pea, and composed of a peculiar substance, which, sooner or later, undergoes a process of decomposition." Passing over what is said concerning the *situation,* period of life, its occurrence in the inferior animals, chemical constitution, we stop at *varieties of form.* Here we learn that tubercular matter presents itself under four distinct varieties, the miliary, encysted, infiltrated, and lamellated, besides that which is known as gray granulations, which Dr. G. regards as a variety of the ordinary gray tubercle.

In regard to the formation, it is said that all tubercular matter, whatever be its form, site, or extent, is, in the first instance, of a liquid nature, becoming solid by the absorption of the serosity which is poured out with it. It grows by the superaddition of one particle to another. The effusion is always effected *under the influence of inflammatory irritation,* preceded by a peculiar dyscrasia. The doctrine of the inflammatory origin is countenanced, if not actually established, by the following circumstances, says our author:—

1. By chemical analysis.
2. Tubercular matter bears a very great resemblance to spoiled, degraded, or cacoplastic lymph, which is an acknowledged product of inflammation.
3. *The deposit is often excited by cold, especially when conjoined with moisture and by bad food; by the former are produced internal congestions, by the latter an impoverished blood.*
4. In many cases the disease is attended or preceded by hyperæmia or active congestion.
5. Well characterized tubercles have been produced on the lower animals experimentally, by mechanical irritation.

6. *There is no appreciable deposit or effusion in any of the shut sacs, cells, or cavities of the body, which is not, strictly speaking, the result of inflammatory action, though this may be too slight to attract attention or to be attended by the ordinary phenomena of that process.*

This crowns the climax and completes the circle at one jump. Thus life and growth are inflammatory actions, and we ourselves are only compound inflammatory globules of considerable size.

Are tubercles ever organized? In answering this question, it is apparent that Dr. G. takes that to be tubercle which Robin, Wedl, Lebert, and others have shown not to be tuberculous. The little masses once described as tubercles comprehend many morphological elements. Besides cells with distinct nuclei, and nuclei mixed with molecules, and granular corpuscles, and the protein bodies with flocculent edges, there may be various other heterologous or homologous formations, as cancer, &c.; so that a tuberculous mass may be like any other mass of tissues—a cancerous tumour even—made up of various elements. In tubercle as in other structures, there may be various pathological changes going on—degeneration, suppuration, exudation. But we think it is not to be inferred from this that tuberculous matter is organizable. To say that it has an organized blastema for its base is a different thing, and more in accordance with the results obtained by the most minute investigations.

We refer the reader for Dr. Gross's able presentation of the other side of this double-headed question to pp. 158, 159 of the *Elements of Pathological Anatomy*. This section manifests throughout a conscientious use of most of the well-established facts, and a praiseworthy fairness in confessing to uncertainties in matters of doubtful knowledge.

The paragraphs devoted to microscopical characters are full and compact, but we have not space for further extracts, and pass on.

Section II. *Melanosis.*—This subject introduces the subject of colouring matters, whose history is yet to be written. For this material has been furnished by Vogel, Virchow, Robin, Verdeil, Bence Jones, and Addison. From our own observations we are led to coincide with those who believe that all the pigments are but slight modifications of the one colouring matter of the blood, more or less oxygenized, and having slightly different molecular arrangements, whence they reflect light differently. They all have many common characteristics, the most remarkable of which is invulnerability; they are hard subjects, and resist assaults. The mortality which is supposed to depend upon melanosis we should no more refer to the deposit of *mélanine* in the tissues than we should refer the deaths from Addison's disease to the bronzing of the skin.

But in turning to our author we find him describing melanotic tumours as tuberoid, lamellated, dot-like, infiltrated, ramiform, and liquid; and we add, as an appendix, that it may be found in any form into which blastema or stroma may be arranged. The subject is treated by Dr. Gross at considerable length, and the section appropriated to it is one of the most interesting in the book.

Sections III., IV. and V. treat respectively of scirrhus, encephaloid and colloid. The imperfect definition which stands at the beginning of Section III. is an index of the false point of view from which Dr. G. regards all the new formations. It is from the external and anatomical side that the subject is viewed. Thus it is said: "Scirrhus may be defined to be a hard, crisp, opaque substance, of a light grayish colour, with dull, yellowish, fibrous intersections organized, liable to lancinating pain, occurring for the most part after the middle period of life, and passing sooner or later into ulceration."

Scirrhus may occur as a solitary tumour, in disseminated masses, as an infiltration, or as a lamella. After the general consideration of these forms, follows a good description of the appearances on section.

The characteristic cancer-juice, on which Lebert, Nélaton, and others insist so much as one of the first-sight, reliable signs, is dropped with two lines thus—"a creamy-looking fluid is occasionally incorporated with the heteroclite mass, and constitutes the most decided evidence of its carcinomatous nature." The student who reads this fact for the first time in this book—and we suppose that it is for that class of readers the book is chiefly designed—will be at a loss how to turn the information to any account as an aid to a differential diagnosis.

Scirrhous tumours present considerable variations of structure, dependent upon the quantity of adventitious matter, its vascularity, its mode of aggregation, and the pressure which is exerted upon surrounding parts; whence names indicative of peculiar appearance have been assigned—such as mammary, pancreatic, lardaceous, and reticular.

Under the head of organization, a very minute and complete description of the microscopic appearances is given, which we have not space to transfer.

As a summary of several remarks our author says: "It may be concluded first, that the deposit of scirrhus is preceded by *inflammation;* secondly, that it has a great predilection for the glandular viscera; thirdly, that it rarely occurs under the age of forty; fourthly, that the matter of which it consists, when first deposited, *strongly resembles that of tubercle;* and lastly, that this matter is deposited always *into the cellular tissue of our organs* in such a manner as to transform their proper parenchymatous structure."

The scirrhous matter is liable to softening; this change may begin at any part of the mass.

A scirrhous ulcer is exceedingly well described by Dr. Gross, p. 176.

Finally, scirrhus, after having attained a certain age and bulk, is occasionally assailed by destructive inflammation, followed by sloughing of the whole of the heterologous matter.

The section in which encephaloid is treated, bears marks of an intermittent development. Scattered throughout it, and in the midst of a style every way scientific and appropriate, occur occasionally paragraphs which, from the absence of the new terms, the phraseology indicative of the late discoveries, show an origin of a much earlier date than the context. Thus, "intimately allied to scirrhus, in its mode of origin, yet differing from it widely in many of its essential features, is encephaloid * * * * *as the term indicates, this morbid growth bears a great resemblance to the cerebral tissue, not only in appearance but also in chemical composition.*" That is what Dr. Gross calls a great resemblance, and illustrates like a steel cut, what we mean by the outside way of looking at pathological anatomy. It is to be hoped that the students will not confound *resembling* with *analogous;* if they should, they would have to look long, before finding any structures that could fairly be called heterologous.

We think the space in which the forms, as tuberoid and stratiform, are described, should have been given to something more important. The forms are accidental, but, presented as we find them in this section, might be supposed to be a good basis for classification.

It may be assumed that encephaloid, when first found out, is always fluid. Its structure is not uniform, and its consistence is so various that it has given rise to various designations. The well known microscopic appearances are clearly described. For them and what is said on the chemical constitution and etiology of this form of cancer, the reader is referred to pages 180–184.

The ulcerated mass sometimes sloughs completely away, as if dissected out, but is soon followed by a reproduction of the disease. It might be added that such growths are not likely to be injured by explorations with a needle, in the hands of a scientific man, nor yet radically cured by applications of chloride of zinc and sanguinaria.

Section V. *Colloid.*—Known also as gelatiniform cancer, alveolar cancer, and gum cancer. "By some," says Dr. G., "this heterologous formation is regarded merely as a modification of the carcinomatous products already described." The same might be said of tubercle, scirrhous and encephaloid. It might have been added that some observers do not regard colloid as carcinomatous at all. We agree with our author, in thinking it possessed of sufficiently distinctive features to entitle it to separate consideration.

The description given of the structure is excellent, but we can give only a general idea of it.

Colloid is composed of two distinct elements, a containing and a contained part—a stroma of fibrous tissue, forming cells of different sizes and shapes, freely communicating with each other, whence a colloid tumour bears some resemblance to a sponge. The other substance is a straw-coloured jelly, unorganizable.

How this disease originates, or what its causes are, we are entirely ignorant. Its progress is usually slow. It manifests no disposition to ulcerate, is never the seat of hemorrhage, or of much pain; the general health usually holds out well, and the countenance rarely acquires that sallow, cadaverous hue, so common in ordinary carcinoma.

Section VI. *Epithelial Cancer.*—This subject has received special attention from Dr. Da Costa, and plates representing a papilla and encysted cells are taken from drawings by this microscopist. The section embraces a general view of all that is known on the subject, although no special reference is made to Lebert or Bennett.

This brings us to the close of the first part of Dr. Gross's work, that which treats of general pathological anatomy. Its faults or errors of doctrine we conceive to be those of its class. It is too much anatomical, and too little pathological. We believe that Dr. Gross is as much convinced as we are, that there cannot be an exposition of morbid anatomy of any value, without pathology, but he always puts the anatomy first, and that disposition has controlled his figures of speech and illustrations, but especially his classification, and has compelled him, or permitted him, to leave the greatest things unsaid, or but faintly indicated. The great facts of diathesis, dyscrasiæ, and all that contributes to make idiosyncrasy, are overshadowed by protuberant tumours, from the size of a billiard ball to a dinner plate, and resembling everything that ever has been served up on a dinner plate. We have brought in, by three or four pages, one after the other, peas, Lima beans, currant jelly, boiled egg, moist cheese, arrowroot, custard, potato, turnip, orange, mustard, calf's liver, and an adult head. These are here enumerated only for the purpose of illustrating our meaning. They are given by the author, to describe qualities, which, we think, are not of much consequence, and may be present or absent, without changing the character of the production, being indifferently applicable to all sorts of growths, heterologous and homologous. But it must be acknowledged that it is his aim to give his pupils clear ideas of these external properties, such as first strike the eye, and are noted by the quick diagnostician and prompt clinical lecturer, rather than the essential qualities, which the medical philosopher should look for. We have, therefore, no doubt that the students, whose privilege it is to listen to Dr. G., receive from him well-defined principles for the diagnosis of external disease, and the coarser specimens of internal disease. But there is much more than this that comes within the domain of pathological anatomy.

In the second part, treating of the application of general principles to special organs, we find nothing challenging criticism except the repetition of the doctrines to which we have already called attention; but we do find much that indicates a vast erudition, and patient, conscientious labour. Its collection of facts is so great that it must ever be an extremely convenient *vade mecum* on the office table—with other books, we should add parenthetically, for it requires those that are complementary by its side.

Having now fairly presented Dr. Gross's doctrines according to his own classification and in his own style and method, we beg our readers to look, for the sake of contrast, at the ideas which have been generally adopted by the members of what may be called the French biological school, and are given here as an answer to the inquiry how anatomy should be studied and taught.

The idea of life, properly speaking, does not belong to the organs and tissues as such, but to certain elements which by their reunion make tissues. These elements may be considered (a) in relation to their form or size; (b) in relation to dynamic attributes. They have, 1, physico-chemical properties, and 2, vital properties.

There are, I. Constituent Elements: II. Elements of Production.

I. Constituent elements are divisible into (α) amorphous elements, (β) globules, cells, nuclei vesicles, (γ) fibres, (δ) tubes, canals, (ε) amorphous substances mixed with corpuscles, cells and cavities.

II. Elements of Production may be (α) Homœomorphic, (β) Heteromorphic productions, as globules of exudation, globules of inflammation, of pus, cancerous elements, corpuscles of tubercle.

All compound tissues consist of, 1st, a fundamental form or species of anatomical element which makes up the mass of the tissue, and whose properties give the specific character to the tissue, and, 2d, of one or more species of elements which do not enter into the constitution of the tissue except as *accessory*, and whose properties only modify the tissue in a secondary manner: *ex. gr.* striated fibres are the essential anatomical element of muscular tissue; the accessory elements are areolar or laminated fibres, fat vesicles between the fibres, capillaries and nervous tubes. This law is of great consequence and should especially be borne in mind in the study of morbid products: thus—

Homœomorphic tumours exhibit this peculiarity; an accessory element which nominally exists in small quantity becomes enormously increased relatively and finally predominates over the fundamental tissue and really becomes the fundamental tissue. Most of the amorphous substances, the homogeneous intercellular substances which in the normal condition are quite secondary or accessory, may become greatly multiplied, as is seen in epithelial, tubercular, and cancerous formations.

The Heteromorphous tumours present many examples of the normal elements becoming accessory, the nature of the production being unchanged. Globules of pus are often accessory elements of cancerous and epithelial tumours. Pavement epithelium is also *accessory* and secondary in cancerous tumours. The granular globules of exudation are secondary elements of a large number of tumours.

By Homœomorphic elements are understood morbid fluids or tissues constituted by anatomical elements of the same nature as those existing in normal tissues and fluids.

Heteromorphic elements are new productions, solid or fluid, differing in nature from those normally existing in the body; their presence is, therefore, a pathological sign. Examples: pus, granules of tubercle and cancer cells, and, according to Robin, one or two others not yet well known.

These never have been observed to be the production of other existing normal elements, by metamorphosis or as a consequence of simple development; they are always the results of processes of *new production* at the expense of a blastema found under abnormal conditions: thus, Products of new generation —neoplastic growths—are made up essentially of, 1st, an abnormal increase—hypergenesis—of elements which belong to the economy, but are normally secondary to some tissue: 2d, the production of elements which are essentially dissimilar from those which exist in the normal state.

Blastema is a generic word used to designate the basis of all anatomical elements, normal or morbid. Pathologically considered, there are as many different blastemata as there are causes of effusion. Whenever exudation of lymph occurs its nature depends upon the cause, local or general, which excited it.

By the word tumour is meant a persistent collection of morbid productions, characterized by a tumefaction which is limited, but having no other fixed physical peculiarities. This definition embraces every variety of morbid tissue and concretion, as well as all collections of fluid circumscribed by new epigeneses, however these latter may have been produced, whether at the expense of the normal structure and fluids, or by means of heteromorphic elements.

The first observation to be made in relation to these growths or tumours is, that they are of a complex nature—of *fundamental* and *accessory* elements. These are relative elements, which are always shifting ground—sometimes an accessory element becoming, under other circumstances, fundamental. Amorphous elements, however, remain accessory. These last are of great importance in relation to the differential characteristics of growths, for according as these amorphous elements exist in greater or less abundance, do we find the external appearances of the growth vary without essential change in the elementary structure.

Much embarrassment has been created in the course of earlier investigations with the microscope, from the fact that the new growths were not considered in their proper relation with normal elements, and especially from misconception as to the modifications to which the epithelia are subject, as regards their number, size, shape.

The whole subject of morbid growths—deposits or exudation—in respect to their essential characters, their benignity or malignity, has been much simplified by the new methods of investigation, which now include, besides a measurement and description of each of the substances in the field of the microscope, and their quantitative chemical analyses, the study of the nutrition, growth, and reproduction.

Still another advance has been made by the discovery that behind the particular growth which is the subject of observation, there is an inexhaustible fountain of materials assimilable to it, and a constant *vis a tergo* which keeps the current towards it in active motion; "new fresh blood is constantly circulating." Practically, then, tumours cannot be made to absorb. This rule has but few exceptions. The same law which is an obstacle to their absorption is the cause of their reproduction after their removal. That means for effecting a change of the dyscrasia, for a constantly increasing number of morbid products are in hand, is a matter of fact. In that direction the science of Therapeutics makes progress.

"It is a law binding only on devils and phantoms that they must go out the same way they stole in." Once these sprouting tendrils get in, the death struggle begins—one or the other must be cut off—there is no remedy but ablation, and that to be early enough.

On the basis of the preceding facts and dogmas a classification of morbid productions has been erected the most complete that can be found in medical literature; but before we proceed to quote it let us look, by way of comparison, at some others. One of the best in design, though at this time quite limited and incomplete, is Bichat's arrangement. He begins with alterations of the fluids; then follows a brief chapter on inflammation; then the maladies of serous membranes in general and particular; then maladies of the mucous membranes; maladies of cellular tissue follow; and maladies of the lungs. Maladies of the glands in order: Maladies of the cutaneous surface; maladies of the muscles of organic life; maladies of the muscles of animal life; maladies of the absorbent system; maladies of the fibrous system; maladies of the synovial system; maladies of the cartilaginous system; maladies of the medullary system; maladies of the osseous system; maladies of the pilous system; maladies of the epidermic system.

The arrangement followed by Mr. Paget in his Lectures on Surgical Pathology is quite scientific, and one of the best and most convenient for use that can be found. We therefore make no apology for asking our readers to look it over again in this connection. This author very properly begins his discourses on Pathology with an exposition of the processes of nutrition and passes *seriatim* through growth, hypertrophy, atrophy, repair, inflammation, and ends this first part with local or molecular mortification, limited death.

Having finished the consideration of Inflammation, the general malady or basic disease, according to some pathologists, Mr. Paget begins anew with specific diseases, and, passing to morbid materials in the blood and tissue, comes to the second chapter, on Overgrowths or Tumours. These are either benign or malignant.

The benign are divisible into cystic and solid. The cystic, *simple, barren;* gaseous and serous cysts: *proliferous,* ovarian: *proliferous,* glandular, mammary; epidermal, dentigerous: fatty, fibro-cellular, areolar: fibrous, painful subcutaneous: fibrous polypi, fibro-calcareous; fibro-cystic: malignant fibrous, recurring fibrous; fibro-nucleated: enchondroma, cartilaginous, simple and mixed: myeloid; fibro-plastic, osseous: mammary: erectile:—*all these are innocent or benign.*

The malignant are: Scirrhus, medullary cancer, epithelial cancer, melanoid, hæmatoid, osteoid, villous, colloid, tubercles.

Dr. Gross's classification may be thus represented: Inflammation at the beginning, *fons* et *origo;* then its terminations and conditions, as effusion of serum, lymphization, suppuration, hemorrhage, softening, gangrene, ulceration, granulation, cicatrization, induration, hypertrophy, atrophy, fistules, transformations, pneumatoses, polypes, hydatids, serous cysts, heterologous formations, tubercle, melanosis, scirrhus, encephaloid, colloid, epithelial, and then special pathological anatomy. This we believe, after thoughtful looking, could not be made worse.

The completest of all we have yet seen, excepting that of Bouchut's *Thèse de Concours,* is this which follows:—

CLASS I.—HOMŒOMORPHIC TUMOURS.

### ORDER I.—SOLID HOMŒOMORPHIC TUMOURS.

GENUS I. TUMOURS FORMED BY CONSTITUENT TISSUES.

*First Species.* Tumours formed by Laminated Areolar Tissue.
  1st variety. Proper fibrous tumours.
  2d “ Colloid.
  3d “ Fibro-cystic tumours.
  4th “ Fibrous—Pediculated—Uterine.
  5th “ Cheloides cicatricial.
*Second Species.* Fibro-Plastic Growths.
*Third Species.* Myeloplaxis—Osseous Medullary.
*Fourth Species.* Tumours of Cytoblastions—Chalazion Gumma—Yams—Syphilitic Fungosities.
*Fifth Species.* Myelocysts—Cerebral Cellules.
*Sixth Species.* Dermic.
  1st variety. Keloides.
  2d “ Keloid, or cicatricial vegetations.
  3d “ Condylomita—Cauliflower excrescences.
  4th “ Nævi—Hypertrophic.
  5th “ Verruca Warts.
*Seventh Species.* Adipose Tumours—Cholesteatomata—Lipomata.
*Eighth Species.* Enchondromata.
  1st variety. Periosteal tumours.
  2d “ Exostosis.
*Ninth Species.*
  3d variety. Osteoid, periarticular, senile, and rheumatismal.
*Tenth Species.* Hypertrophic, Glandular, Exdermoptoses, and Sebaceous.
*Eleventh Species.* Condensed Glandular Tumours.
*Twelfth Species.* Colloid Glandular Tumours.
  1st variety. Arterial fungous tumours, acquired—Aneurism.
  2 “ Nævi materni—Congenital erectile tumours.
*Thirteenth Species.*
  3d variety. Varicose venous erectile tumours—Epididymitic—Testicular—Thyroidal—Ovarian.
  4th. “ Aneurism by erosion—Extravasated blood—Dissecting and osseous aneurism—Erectile tumours of liver.
*Fourteenth Species.* Parasitic—Heterotopic.
  1st variety. Testicular.
  2d “ Ovarian.
  3d “ Cutaneous.

GENUS II. TUMOURS FORMED BY PRODUCTS.

  1st variety. Epitheleomata.
  2d “ Horny tumours.
  3d “ Pigmentary—Melanosis.
  4th “ Exostoses dental.
  5th “ Gouty concretions—Tophaceous.
  6th “ Calcareous tumours — Inter-glandular — Cutaneous—Salivary.
  7th “ Tumours formed by products of conception—Moles.

GENUS I. TUMOURS FORMED BY CONSTITUENT FLUIDS.

### ORDER II.—HOMŒOMORPHIC TUMOURS—FLUID.

*First Species.* True Aneurisms.
*Second Species.* Hæmatic Tumours — Cephalhæmatomata—Hæmatocele—Polypiform—Hæmatomata.
*Third Species.* Gaseous Tumours—Emphysema—Pneumatoses.

GENUS II. TUMOURS FORMED BY LIQUID PRODUCTS.

*First Species.* Glandular Cysts of many varieties.
*Second Species.* Cysts formed in Excretory Ducts.
*Third Species.* Cysts formed of Parenchymata, not Glandular.
*Fourth Species.* Cysts, Synovial.
*Fifth Species.* Cysts of Accidental Synovial Bursæ.
*Sixth Species.* Cysts of Cellular Tissue—Congenital—Hydrocephalic.

CLASS II.—HETEROMORPHIC TUMOURS.

ORDER I.—SOLID HETEROMORPHIC GROWTHS.

*First Species.* Tubercle.
*Second Species.* Typhus Matter.
*Third Species.* Thnétoblastic, or Fatal Cancer.
*Fourth Species.* Heterodenic—Butyroidal Sacs.
*Fifth Species.* Tumours resulting from Anatomical Wounds.

ORDER II.—LIQUID HETEROMORPHIC TUMOURS.

*First Species.* Purulent—Abscess—Anthrax—Furuncle.
*Second Species.* Parasitic Tumours—Cysticercus Hydatids with Echinococci—Hydatids without Echinococci.

In our summary we call disease any disorder of the forces or of the constituent parts of the body. But, absolutely, there is no health. There is always disease, with more or less of actual and prospective manifestation. There is always a disturbance from the too much or the too little, if not from empoisonment or other harmful absorption. There is no more likelihood of absolute health than of an absolute quietude of the winds, or an absolute electrical equilibrium. So long as there is variableness of temperature, so long will there be disturbances of the media, and so long disturbance of the functions of organisms. As long as the sun shines will continents upheave, and blastemata degenerate. When will the media be at rest? Not till then will the forces and the elements within the body of man be at rest.

So long as the sun chimes in with the music of his brother spheres, and the pomp of the earth revolves, and the "brightness of paradise alternates with deep-fearful night"—and the "sea foams up in broad waves," and storms roar—so long shall the body of man be sick, and his mind unstable; so long shall there be sins for repentance and sorrow for consolings. As long as aggregate cytoblasts shall be prone to disturbances, so long shall masses of men be liable to revolutions and conflicts. So long as there shall be social sins and degradations, so long shall there be maladies of individual organisms.

Thus "all revolves into the whole, and through *the* All, ring harmoniously all the heavenly influences." C. F. H.

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ART. XV.—*Human Histology, in its Relations to Descriptive Anatomy, Physiology, and Pathology.* With 434 Illustrations on Wood. By E. R. PEASLEE, A. M., M. D., Prof. of Physiology and Pathology in the New York Medical College, of Anatomy in Dartmouth College, and of Surgery in the Medical School of Maine, &c. &c. Philadelphia: Blanchard & Lea, 1857. 8vo. pp. 618.

THE plan of Prof. Peaslee's book is to combine in a single volume a description of the ultimate chemical elements entering into the composition of the human body, that of the proximate principles, of the anatomical or structural elements, and of the tissues proper, together with some account of their healthy functions, and the morbid alterations to which they are subject in disease. The first part is accordingly devoted to the consideration of the chemical elements and the proximate principles; and the second part to the more purely anatomical description of the minute forms and structures demonstrable by the microscope.

The consideration of the ultimate chemical elements of the animal frame, naturally requires but a very limited space. It amounts, properly, to little more than an introduction to the main subjects of the work. For a knowledge of the ultimate elements into which the animal solids and fluids can be decomposed by chemical operations, though essential as a basis to the commencement of anatomical and physiological studies, really carries us onward but a very short distance in their prosecution. The cases are quite rare, in the present state of our scientific attainments, in which any important anatomical or physiological question can be decided by investigations in that direction.

We may indeed determine, as Boussingault has done, by comparing the total quantity of nitrogen taken in with the food with that discharged in the excretions, whether this substance be habitually absorbed or eliminated in the process of respiration; and in some instances the presence or absence of the same element becomes an important distinctive characteristic of various animal substances. But the business of the anatomist and physiologist is, after all, mostly with the proximate principles, and not with the ultimate elements of which they are composed. The characters of the former are, to a great extent, peculiar, and their transformations in the living body readily subject to observation. The latter are not at all distinctive of organized bodies, and the changes which they undergo in the animal economy are, for the most part, too obscure to be followed by the contrivances of the experimenter.

In describing the proximate principles, the author has adopted the plan of Robin and Verdeil, first brought forward in their admirable work on *Physiological and Anatomical Chemistry*, published at Paris in 1853, and which was reviewed in our number for July last (*see* p. 158, *et seq.*) It is very gratifying to see that the views advanced in this work, so full of originality, and at the same time so extremely useful in their application, have met with a generally prompt and cordial reception on this side the Atlantic. The true nature and relations of the proximate principles, and the manner in which they should be studied, were indeed never fairly understood before the appearance of Robin and Verdeil's book. They treated the subject from an entirely novel point of view, but one which seems only to have required a fair and distinct announcement to be almost universally acknowledged as correct. A proximate principle, according to this view of the matter, is a substance which may be extracted from an animal solid or fluid by means which do not destroy or alter its chemical nature and properties. Proximate principles may, in fact, be said to exist in all homogeneous solids and fluids of mixed composition, and may be extracted from them by the same means as in the case of the animal tissues and secretions. Thus, in a watery solution of sugar, we have two proximate principles; 1st, the water, and 2d, the sugar. The water may be separated by evaporation and condensation, after which the sugar remains behind in a crystalline form. These two substances have therefore been simply *separated* from each other. They have not been decomposed, nor their chemical properties altered. On the other hand, the oxygen and hydrogen of the water were not proximate principles of the original solution; for they did not exist in it under their own forms, but only in a state of combination, and in the form of water—a fluid whose physical and chemical properties are entirely different from theirs. If we wish to ascertain, accordingly, the nature and properties of a saccharine solution, it will afford us but little satisfaction to subject such a solution to an elementary analysis; for its nature and properties depend not so much on the presence of the ultimate elements—oxygen, hydrogen, and carbon—as on the particular forms of combination (water and sugar) under which they exist.

These considerations, which are so plain in regard to a simple fluid like a watery solution of sugar, become still more important when applied to mixtures of a complicated character, such as the animal tissues and fluids. In examining these substances, their ingredients must be, as above, simply *separated* from each other, not decomposed. The analysis of an animal solid or fluid is therefore properly an anatomical operation, and not a chemical one, and must be conducted from an anatomical point of view, so as to produce results useful to the anatomist and physiologist. So fully was Robin impressed with this idea, that he at first wished to adopt for his book the title, *Fundamental Anatomy and Physiology*, instead of *Anatomical and Physiological Chemistry*. Though the former would have been altogether the more correct title, in a scientific point of view, he adopted the second, "in order," as he expressed it, "not to break away too suddenly from the established association of ideas, and thereby run the risk of not being fully understood."

Since the investigation of the proximate principles, therefore, is really to be regarded as an anatomical and not as a chemical pursuit, it very properly precedes the study of microscopic anatomy, which is to carry us one step farther in the examination of the complicated structure of the animal frame. Robin's *Chimie Anatomique* was, in fact, designed by him as the introduction to a work on *Minute or General Anatomy*, which has yet to make its appearance.

Dr. Peaslee has united the two subjects, as we have mentioned above, in a single volume, but has retained the order of precedence, treating first of the proximate principles, and afterward of the minute anatomical forms of which the tissues are composed.

The water, for example, which enters, as a proximate principle, into the composition of different parts of the animal frame, is to be extracted and examined as in the case of the simple saccharine solution above mentioned. All the animal solids and fluids, without exception, are thus found to contain a certain proportion of water, which may be separated by the process of evaporation. The water, furthermore, which is obtained in this way, from the solids as well as from the fluids, is not simply entangled in the interstices of the former, but actually united everywhere with their substance. The peculiarity of the condition, therefore, under which the water exists in the tissues, becomes evident; for in those which are firmest in consistency, such as the bones and teeth, the water which they contain is actually in a solid form, not crystallized, as in the case of ice, or of saline substance which contain water of crystallization, but amorphous and solid, simply by the fact of its intimate union with the animal and saline ingredients of the tissue. The water is therefore, in these cases, solidified by the matter with which it is in union, as, under other conditions, solid substances may themselves become fluid when dissolved in water.

Different proximate principles being always mingled together, in this way, in the animal fluids, form their simplest or fundamental anatomical constituents, and hence the propriety of the title, *Fundamental Anatomy*, proposed by Robin for the study of this subject. Every tissue, furthermore, and even every anatomical form, no matter how minute, consists of a mixture of at least two, and generally many more, proximate principles intimately united with each other. Every muscular fibre, and even each filament of white fibrous tissue, not more than $\frac{1}{20000}$th of an inch in thickness, if isolated and examined, would be found to contain, on the one hand, water, and, on the other, a peculiar animal matter in union with it. Several saline substances are also always present, in varying quantity. Each red globule of the blood, not more than $\frac{1}{3000}$th of an inch in diameter, yields to a properly conducted anatomical analysis: 1st, water; 2d, two different animal substances (globuline and hæmatine); 3d, fats, in a free or saponified condition; and 4th, no less than eight different saline substances. It will readily be seen, therefore, that in a strictly scientific arrangement, the study of the proximate principles holds the first place, and that of the fluids, the microscopic elements, and the tissues, the second and the third. Practically, of course, it is different. Before analyzing any particular portion of the frame, we must become familiar with its figure and dimensions, so as to isolate it from the surrounding parts; but once having done so, the subsequent arrangement of our anatomical studies must be in the order which we have indicated above.

In the first division of the part devoted to microscopic anatomy proper, the author treats first of the *simple histological elements*, and afterward of the tissues. The simple histological elements are divided into—

1st. Homogeneous substance.
2d. Simple membrane.
3d. Simple fibre.
4th. Cells.

The first of these, or *homogeneous substance*, is an important anatomical element, owing to its wide distribution, and the large quantity of it which exists in the body. There is hardly a tissue or an organ which does not contain more or less of it. It is this which occupies the space between the cells of cartilage and between the filaments forming the bundles of areolar tissue. It unites the scattered cells and fibres which are imbedded in it into a continuous and more or less resisting mass. It is a substance which cannot be directly observed under the microscope, owing to its amorphous condition, and the uniformity of its appearance. Its presence is only indicated by observing that the cells and granules, or the fibres and fat globules seen under the instruments, are not floating loosely about the field, but are retained in their position by the intervening material. It is only in some instances where it is more or less granular in texture, as in the case of some kinds of cartilage, that it can be directly seen. Here, however, the above name ceases to be entirely applicable, as it is no longer a strictly homogeneous substance.

Notwithstanding the importance of this material, as an anatomical ingredient of the tissues, but very little can be said of it since it exhibits no definite characteristics under the microscope; its optical properties being, in fact, altogether negative in character. Very widely different substances, so far as regards their proximate constitution and their physiological properties, will present precisely the same appearance under the microscope, provided they be completely homogeneous. Even the plasma of the blood, when examined by the microscope, differs from the hyaline substance of cartilage only by its fluidity. The term homogeneous substance, therefore, is a general, not a specific term. It does not belong to any particular anatomical element, but only indicates a certain combination of optical properties which may be shared by several indifferently.

*Simple membrane* is a special form under which the above-named homogeneous substance shows itself. It occurs, according to the author, in the walls of cells, in the sarcolemma of muscle, and the tubular covering of nerve fibres. In it are often imbedded nuclei, as, for example, in the case of the capillary bloodvessels, &c. Very nearly the same remarks may be made as to the varying characters of this membrane in different tissues and organs, as we have already given above in regard to the homogeneous substance. It is, in fact, not identical in the different situations in which we meet with it, but is really to be regarded as often composed of different substances, presenting themselves under the same apparent form.

*Simple fibre* is also spoken of as one of the elementary forms of the animal tissues. The term "simple fibre" would be generally understood to include all fibres of homogeneous structure, such as those of white fibrous tissue, or of elastic tissue, as distinguished from the compound fibres of nerve, or of voluntary muscle. The author, however, restricts this term to the interlacing fibres of the membrane of the egg-shell, and those of coagulated fibrin, when it exhibits the peculiar condition known as "fibrillation." Understood in this sense, the simple fibre is hardly to be regarded as an organized anatomical element, since it is simply the effect of coagulation taking place in the fluid fibrin, and does not form an integral part of any of the permanent tissues. The fibrillation of fibrin, indeed, is regarded by many, and, we think, justly, as not, in any degree, a form or process of organization, but one merely of solidification—the coagulated fibrin being inert and useless for all purposes of nutrition or textural development; as much so as coagulated albumen or coagulated casein would be, under similar circumstances. Whenever new formations of a permanent character, therefore, show themselves subsequently to the deposit of a fibrinous exudation (such as vascular and fibrous pleuritic or peritoneal adhesions), it is not the coagulated fibrin which is supposed to be directly converted into these new tissues. The fibrin is thought to be reabsorbed after its exudation, as extravasated blood or serum would be, and as happens also, in some instances, with pus; while the new tissues are produced by a slow process of nutrition and growth, the materials for which are exuded gradually in a liquid form by the neighbouring parts, as the process of formation goes on. This is the view entertained by Robin, and one which has many points of evidence in its favour.

In the chapter on *Cells*, the author passes in review the anatomical character of the nucleus, nucleolus, and other parts of the cell structure. He regards the ovum, also, as a cell; with the germinative vesicle as a nucleus, and the germinative spot as a nucleolus. The adipose vesicle is, besides, included in the same category. Both these forms are considered by some microscopists as distinct from true animal cells, not only by their very much larger size, but also by the details of their anatomical organization. The peculiarities of pigment cells, in different parts of the body, are described in the same chapter, and finally those of cancer cells, cancer nuclei, &c. In regard to the latter the author adopts the views of Lebert, which have been received with such general favour by microscopists in this country as well as in France.

In the second division we have "Hydrology," or the description of the fluids of the human body, as follows: 1st, the blood; 2d, serous secretions and exudations; 3d, mucous and glandular secretions; and 4th, the cutaneous secretions. In treating of *mucus* the author describes certain microscopic elements, the "mucous corpuscles," which he regards as a regular product of development from the albuminoid ingredients of the fluid. These corpuscles, which present very different appearances in different kinds of mucus, are considered by some authors as characteristic of mucus, in the same manner as pus-globules are characteristic of pus. Many directions have accordingly been given, from time to time, for the purpose of enabling the observer to distinguish microscopically mucus from pus; but the characters relied on for this purpose were so indefinite that they have been found of but little practical utility. Many of the bodies described as mucus-corpuscles are undoubtedly pus-globules, accidentally present in the secretion; for nearly all mucous membranes produce pus, in greater or les abundance, on very slight irritation. Others are, as plainly, abnormal or imperfect epithelium cells, separated accidentally from the free surface of the membrane, and mingled with its fluid secretion. These facts have led some microscopists, of very high authority, to express the opinion that there is no such thing as a "mucous corpuscle," properly speaking; that is, that there is no constant and peculiar microscopic element characteristic of mucus, as the pus-globule and the blood-globule are of their respective fluids. Mucus, as they understand the term, is simply a mixture of watery, saline, and albuminoid ingredients, presenting no anatomical form to the eye on microscopic examination, any more than the serum of the blood, the synovial fluid or the pancreatic juice: but having a perfectly colourless and transparent appearance, and a more or less viscid consistency. We confess that this view seems to us altogether the most correct one; since when mucus is collected from situations where no foreign admixture has been possible, as where it has been taken, for example, directly from the cavity of the follicles of the cervix uteri, it is actually perfectly clear and transparent to the naked eye, and does not show any anatomical forms on microscopic examination. Mucous secretions become opaline and discoloured, just in proportion as they are mingled with other fluids of a different consistency, or with puriform and epithelial elements. Practically, however, we seldom observe them in a condition of complete purity, unless we take the trouble, as above mentioned, to obtain them directly from the situations in which they are produced.

Beside the microscopic elements of the animal fluids, the author speaks of their physical properties and their chemical constitution. A very important fact concerning these fluids, and one which could not have been anticipated beforehand, is the remarkable quantity in which some of them are secreted. The experiments of Bidder and Schmidt on the gastric juice in dogs, for example, led to the conclusion that the quantity of this fluid secreted in twenty-four hours was not less than $\frac{1}{10}$th the weight of the whole body; and though the same estimate applied to the human subject would give 12 to 18 pounds of gastric juice per day, these numbers are probably rather below than above the real quantity; for all the fluids are, generally speaking, more abundant in the human subject than in the lower animals. The difficulty which is generally felt in accepting so high an estimate of the daily quantity of these secretions as the true one, is, however, rather apparent than real; and it is possible that even a much larger quantity may be discharged daily by the glandular apparatus of the mucous membranes, without producing any ill effect on the system at large.

The author, for example, rejects some of these high estimates for a reason which we cannot but regard as altogether erroneous.

> "Experiments," he says (p. 199), "lead to the conclusion that dogs secrete in twenty-four hours an amount of gastric fluid equal to one-tenth their weight. This would give a range between 12 and 18 pounds for a man. Lehmann states, however, that 'according to several direct observations on a woman, as

much as *one-fourth* of the weight of the body has been found to be secreted as gastric fluid’!!! Of course this is all secreted directly from the blood, and the latter is estimated by Lehmann to constitute but *one-eighth* of the weight of the body. No further remark appears necessary upon his estimate of the gastric fluid.”

It is in reality, however, not at all impossible that a quantity of gastric juice equal to 25 per cent. of the entire weight of the body should be secreted from the blood, which equals only 12½ per cent. of the same weight. For the gastric juice is not separated at once from the circulating fluid, and discharged from the body. It is secreted gradually; and almost immediately afterward begins to be reabsorbed, together with the elements of the food which it has digested and dissolved. Its secretion and reabsorption afterwards go on simultaneously; and the fluids which the blood loses by one process are immediately restored to it by the other. Examinations of the alimentary canal, while digestion is going on, show that there is comparatively but little fluid present in its cavity at any particular moment during this process; but, at the same time, the successive portions of gastric juice which enter the alimentary canal by exhalation, and then leave it by reabsorption, would amount, if taken together, to a quantity equal or superior to the entire mass of the blood. It is unnecessary to say, moreover, that in the experiments referred to by Lehmann, the entire quantity of gastric juice (7 pounds in the dog, 31 pounds in the human subject) was never actually withdrawn from the gastric fistula during any one day; but small quantities were taken at different intervals, and even in some instances on different days, at various periods after feeding; and the whole quantity estimated from these data. This estimate, furthermore, is fully borne out by the result of calculations as to the amount of food which a given quantity of gastric juice is capable of digesting.

The third division comprises the description of the tissues. The classification of the tissues which is adopted is into simple and compound; the *simple* comprising epithelium, yellow, and white fibrous tissues, and osseous tissue, including that of the teeth; the *compound* comprising areolar and adipose tissues, cartilages, muscle, nerve, membranes, vessels, alimentary canal, and the various glandular, respiratory, and sexual apparatuses, together with the organs of which they are composed. The simple tissues are defined to be those in which there is but one kind of simple histological element, while in the compound tissues there are two, three, or more of these elements mingled together. It will be seen that the author ranges osseous tissue, which would usually be regarded as compound, under the head of the simple tissues; considering it as constituted, not by lacunæ and canaliculi, and the soft substances which fill them, imbedded in a solid matrix—but by the solid matrix alone, this consisting, in its turn, only of the ultimate granules or minute angular corpuscles, welded together into laminæ, which have been described by Bowman and others.

We doubt, however, whether this granular aspect of the bony substance should not be regarded in the same light as that of cartilage, or as the granular texture of the substance of lymph and pus-globules, or of organic muscular fibres. The ultimate granules themselves, as they exist in the bony substance, are exceedingly minute. Their size is given (page 321) on the authority of Kölliker, as $\frac{1}{6000}$ of an inch. This is undoubtedly a misprint for $\frac{1}{60000}$, which is really Kölliker’s measurement (.0002 of a line). Todd and Bowman give the size of these granules as $\frac{1}{6000}$ to $\frac{1}{14000}$ of an inch, and Tomes about $\frac{1}{16000}$ to $\frac{1}{20000}$ of an inch. The larger of these measurements, however, are derived from the examination of bone which has been burnt and crushed, or boiled in a Papin's digester; while those of Kölliker are taken from the direct examination of the osseous substance in its natural condition, and are, on that account, probably the most accurate.

In his description of the minute anatomy of the liver, the author has introduced the recent and extremely important discoveries by Dr. Beale, viz., the arrangement of the network of cell-containing tubes within the substance of the acinus, and their connection with the interlobular hepatic ducts; as well as the dilatations or glandular sacculi, seated in the coats of the biliary ducts in some of the lower animals.

The whole volume is plentifully illustrated with wood-cuts from the standard works of Lehmann, Bennett, Todd and Bowman, and the classical Microscopic Anatomy of Kölliker, and, altogether, gives a very full and complete account of the histology of the human body, so far as it is known at the present time. J. C. D.

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Art. XVI.—*The Principles and Practice of Obstetrics: Including the Treatment of Chronic Inflammation of the Uterus, considered as a Frequent Cause of Abortion.* By Henry Miller, M. D., Professor of Obstetric Medicine in the Medical Department of the University of Louisville. With Illustrations on Wood. 8vo. pp. 620. Philadelphia: Blanchard & Lea, 1858.

On the appearance of the original edition of Dr. Miller's obstetrical treatise, we were among the first to introduce it to public notice, and the highly favourable judgment of its merits then pronounced by us, has been fully sustained by the suffrages of the profession generally. In the new edition now before us, the entire work has been greatly enlarged and improved, so as to give it a form and a value that cannot fail to place it permanently among our standard systematic treatises on the theory and practice of obstetrics.

Without, perhaps, precisely the same elaborateness of detail and display of erudition which distinguish some of these, the work of Dr. Miller, by the clearness and distinctness with which each question embraced in it is discussed and elucidated, and the direct practical tendency of all its teachings, is one especially adapted as well for the use of the student as for consultation by the practitioner, on the spur of the moment, that he may confirm the correctness of his own conclusions, or detect their fallacy, by comparing them with those that have been arrived at from the experience and investigations of acknowledged experts.

The treatise commences with an account of the physical structure of the pelvis—its forms, regions, diameters, planes, and axes—and of the anatomy of the sexual organs of the female, and their physiological functions. To all these subjects due prominence is given, as constituting some of the most important points of that preliminary knowledge, an intimate acquaintance with which is essential to form the successful and safe obstetrician; and without a perfect familiarity with which no one should be permitted to undertake the management of a case of labour.

Dr. Miller adopts the modern view as to the menstrual discharge—that it is simply blood discharged by the vessels of the lining membrane of the uterus, but rendered uncoagulable by becoming mixed with the acid mucus and epithelial cells of the vagina. This view is so fully established by the investigations of Donné, Whitehead, and others, that we are surprised the old notion of the menses being a specific secretion should be insisted on by so intelligent a writer as Churchill in the latest edition of his Midwifery.

The description of the pelvis, and of the female organs of generation, with their functions, is followed by a consideration of the clinical exploration of the uterus and its annexes; not merely with a view to the settlement of the question of the existence or non-existence of pregnancy, but also to determine whether any deviation or other abnormal condition of the womb or its annexes is present; extending thus the subject of the physical exploration of the female generative organs beyond the province of obstetrics, strictly speaking, into that of uterine pathology generally. How far this may be considered advisable in a treatise professedly devoted to the science and practice of midwifery may admit of question. As the author, however, has considered it necessary in a subsequent chapter, to enter at length into a consideration of the pathology and treatment of inflammation and displacement of the uterus, it was perhaps necessary that he should lay down, in the chapter before us, the physical means adapted to their detection and diagnosis.

The subject of pregnancy is next discussed. In the several sections of the chapter devoted to this important department of female physiology, the reader will meet with a clear, succinct account of the successive changes that occur in the uterus itself, and in the ovum deposited in its cavity, from the period of conception up to the full term of utero-gestation. The several questions involved in the discussion of the important phases of uterine life are examined with much ability by the author, and his conclusions in respect to each will be found to be, in general, borne out by the results of recent observations.

Speaking of the gradual development of the uterine cavity as the ovum augments in size, and of the supposed antagonism existing between the muscles of the body and those of the neck of the uterus, in consequence of which the former, it is taught, tend constantly to expel the ovum, and the latter to resist its expulsion, until the close of the term of pregnancy, when the power of the body of the uterus preponderates, and the process of parturition commences and progresses, and the child with the secundines is expelled; speaking of this theory of the forced development of the uterine cavity until finally the cervix uteri is made to take part in it, which is taught by many distinguished obstetrical authorities, Dr. Miller remarks:—

> "It is manifest that the theory rests on the assumption that the uterus is naturally disposed to resist, *unguibus et rostro*, all intrusions upon its premises, an assumption so contrary to analogy that it ought not to be admitted without the clearest proof. But let us examine its pretensions in its twofold application, and *first* as affording an explanation of uterine development. Here it seeks to expound a phenomenon which is itself gratuitously assumed, namely, such a development of the cervix as enlarges the capacity of the cavity of the gravid uterus.
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> "According to the observations of M. Cazeaux, the neck, especially in women who have borne children, preserves the whole of its length until the last fifteen days of pregnancy, or at least until the commencement of the ninth month. He avers that he has repeatedly verified this fact, which had already been noted by Professor Stolz, of Strasburg, and publicly taught by Professor Dubois since 1839."
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> "In primiparæ, the cervix uteri offers some peculiarities, which, as far as our present subject is concerned, consist in its shortening somewhat, instead of preserving its usual length, throughout the greater part of pregnancy, as in

multiparæ, and in its internal orifice becoming dilated before the external. Professor Stolz explains this shortening in the following manner: At the sixth month, the vaginal portion of the neck begins to shorten, while *it widens at its superior part.* The external orifice, continuing closed, approaches the internal, and consequently the cavity of the neck becomes larger in the middle, *until the two orifices are brought near each other: the internal orifice then opens first*, which happens during the last fifteen days of pregnancy; the rest of the body disappears much more rapidly than it had done before, and a projection can no longer be felt; the external orifice remains closed."

"The observations of Professor Stolz are substantially confirmed by M. Chailly; and the entire account, which he gives of the changes that the neck undergoes during pregnancy, contradicts the hitherto received opinions of writers on the subject.

"There is one well-known fact, to which we may allude, that goes far to establish the accuracy of these reseaches of MM. Stolz, Dubois, Cazeaux, and Chailly, if it be not of itself sufficient to refute the opinion formerly entertained. It is this: When the neck of the uterus is so much developed as to allow the finger to be passed to its upper orifice, which it is by the seventh month in multiparæ, the membranes can be felt, and are organically united to the uterus around the margin of the orifice. When, again, the neck is entirely obliterated, as it is at term, the membranes can be felt, and are still attached around the os uteri. Now, as it is admitted that during the first five or six months, the ovum is confined to the cavity of the body, and that the neck is not lined with decidua, were the obliteration of the neck owing to the expansion of its upper part, either the membranes would be too high to be reached by the finger; or, if they were sufficiently extensible to be pushed down into the expanding neck by the growing ovum, they would not be found adhering to its surface. The latter declaration is authorized by the fact that, in the progress of gestation, the membranes become less vascular, and their adhesion to the internal surface of the uterus is gradually weakened. But in either case, at the seventh or ninth month, the membranes are found to have vascular connection around the uterine orifice, for when separated by the finger, or by uterine contractions, as in the latter case they are, so soon as labour commences, there is a slight effusion of blood. We conclude, therefore, that the neck contributes nothing to the cavity of the gravid uterus, which is made up entirely of the dilated cavity of the body."

* * *

"The *secondary application* of the theory to explain the induction of labour is best met by demanding the proof that the uterus displays, during gestation, such intolerance of its burden as is attributed to it."

"There is absolutely no evidence of such contractile efforts of the uterus as this theory assumes, except the occasional tension of the membranes, sometimes observed towards the completion of gestation, the os uteri being then sufficiently open to admit the finger. Slight contractions of the fundus may produce this tension, but these are not such as constitute labour, for they are unaccompanied by pain, and take place without the consciousness of the individual herself. Allowing, however, that they are labour-pains in disguise, their presence at so advanced a period of pregnancy is no proof of their existence during the earlier periods; and in the complete absence of such proof, we are loath to admit the assumption that they do exist, because it makes the uterus the strangest anomaly in the body, if not in nature. It is destined first to contain and nourish the fœtus, and then to expel it when its maturity is acquired. But, according to this assumption, the first is an irksome task imposed upon it which it continually endeavours to quit by expelling its contents. Such a constitution of the gestative organ could hardly exist, and abortion be not perpetually threatened, without, as far as we can perceive, any compensating benefit; for we cannot imagine that its development could be promoted by it. There is, in fact, no conceivable way in which contraction of the uterine fibres during pregnancy could favour their development, except that imagined by Baudelocque, viz., one class of fibres stretching another by the superior force of their contractions by which he attempts to account for the development of the cervix uteri. How, then, are the fibres of the body of the uterus developed during the first six or seven months of gestation, the neck being quiescent all the while? If these need no such force to aid their development, neither do those of the neck; both are developed after their own peculiar fashion, without the interference of one with the other. The neck, as we have seen, is developed in women who have borne children, in a manner inconsistent with the idea that any sort of force is exerted upon it by the body, that is, from below upwards."

"From what has now been declared, it may be inferred that I reject the notion of Levret, indorsed by Baudelocque, and more recently by Meigs, that the neck is the antagonist of the body of the uterus, *during pregnancy*, simply for the reason that there is not a tittle of evidence that there is anything to be antagonized. The body quietly suffers itself to be distended by the product of conception, or rather its growth keeps pace with that of the ovum, whilst the neck is not at all concerned either in making room for the fœtus or barring its escape. But though the neck be not called on to exert a retentive faculty, it holds, nevertheless, the key, if I may so say, which unlocks the uterine cavity, by virtue of the relation, of which mention has been made, established between it and the body by pregnancy, in consequence of which impressions made upon it, specially upon its internal surface, are reflected upon the body and excite its muscular fibres to expulsive action. Hence the necessity of keeping the neck closed to so late a period of pregnancy, while the body is growing and expanding in every direction. That labour is naturally excited in this way, I shall endeavour to prove hereafter. The neck is not the active but the passive custodian of pregnancy; it simply withholds the key, until the time to unlock the uterus has arrived."

In respect to the placental connection between the mother and fœtus, Dr. Miller adopts the views of Weber, that a congeries of colossal capillaries intervene, into which the utero-placental arteries open, and from which the utero-placental veins arise. Against these capillaries, in which the circulation is extremely sluggish, the villi of the chorion impinge, and dive, so to speak, as they push their growth outwardly; while in such a process they necessarily become invested with a covering of the inverted membrane, forming the walls of the decidual capillaries.

As to the uses of the placenta in reference to the fœtus, Dr. Miller remarks:—

"*First: It is its organ of respiration.* The umbilical vessels, already described as terminating in capillaries upon the dendritic processes of the chorion, belong exclusively to the vascular system of the fœtus. They consist, as we have seen, of three trunks, two arteries, and one large vein—a branch of the inferior vena cava—and have no communication whatever by anastomosis with the blood-vessels of the mother. The arteries convey no inconsiderable portion of the blood of the fœtus to the placenta, which, after circulating freely and minutely through it, is returned to the fœtus, not a drop passing into the vessels of the mother. While circulating in the placenta, this blood is brought in contact with the blood of the mother, flowing through the canals of the maternal portion of the placenta, or at least nothing intervenes but the thin walls of these canals, and the delicate coats of the fœtal capillaries. The fœtal blood is thus enabled to abstract oxygen from, and impart its superfluous carbon to, the blood of the mother; and although it may be supposed that this vital operation is not as freely performed as in animals that inhale atmospheric air, it is at least as advantageous an arrangement as the branchial respiration of such as inhabit the waters, to which it is, in fact, analogous—fishes getting their oxygen from water, and the fœtus from maternal blood." * * *

"We have abundant proof that the fœtal blood is aerated in the placenta, in the consequences that arise from compression of the cord to such a degree as to arrest the circulation of the blood in its vessels. Such compression is liable to happen, during labour, when the cord prolapses before the head of the child, in vertex presentations, and also while the head is passing through the pelvis, in nates presentations; and whenever it does, death is the consequence, while both the celerity and manner of death show clearly that it is caused by suffocation. The cord ceases to pulsate, and the fœtus, after a short convulsive struggle, evinces no further indications of life.

"*Secondly: The placenta is the organ through which the fœtus derives its nourishment from the mother.* Of this, it must be confessed, there is no *positive* evidence; but, at the same time, it may be safely affirmed that, in relation to this point, *negative* evidence is altogether satisfactory. There is absolutely no other medium through which the fœtus can obtain its supplies of alimentary matters. The only other possible source is the liquor amnii, the fluid which surrounds the fœtus; and the doctrine that this is appropriated, either by absorption or deglutition, has long since been exploded, by facts and arguments that cannot be answered, which need not be rehearsed in this place. How or in what form nutriment is received through the placenta is not known; most probably there is a set of vessels, in connection with the umbilical capillaries, which open into the maternal portion of the placenta, and, abstracting from thence the needful supplies, convey them at once into these capillaries, to be incorporated with the fœtal blood. Whether these hypothetical vessels take up blood, or only certain of its elements, we do not know; nor, as far as I can see, is it a matter of the least practical moment that we should know. Nature here, as elsewhere, is chary of her revelations that might gratify the curiosity, without adding to the resources of her votaries."

In treating of the position of the fœtus in utero, and the cause of the great preponderance of vertex presentations, Dr. Miller enters into a somewhat extended exposition of the facts which disprove the generally received mechanical explanation, that it is due to the weight of the head, compared with that of the rest of the body, at all stages of fœtal development. He adopts the views of M. Dubois, that the cause of the greater frequency of head presentations is in some manner dependent upon the vitality of the fœtus, and that the position is probably assumed and maintained by the voluntary or instinctive movements of the latter. In which views Dr. Simpson also coincides, excepting that he contends the movements on the part of the fœtus, in consequence of which its head is made to be the most dependent part, in utero, are purely of a reflex or excito-motory character.

All this, however, is but mere hypothesis. The most usual intra-uterine attitude of the child, with its limbs flexed and folded upon its body and its head dependent, shapes it, if we may be allowed the expression, into a form exactly adapted to that of the uterine cavity, while it is the one most favourable to the mechanism of labour. We may, therefore, safely conclude that it is the one impressed upon the fœtus by the same vital laws which govern everything that relates to intra-uterine gestation. The exact forces by which it is effected are beyond our ken, as well as those which occasion the frequent deviations from what may not improperly be assumed as the normal fœtal position and attitude.

The subject of abortion very naturally follows that of pregnancy. Dr. Miller denies the position of Dr. Meigs, that the hemorrhage which is the invariable concomitant of abortion proceeds from the placental surperficies of the womb, and always implies a detachment of the placenta to a greater or less extent. He maintains, and we think with great show of reason, that it is derived chiefly from the decidual vessels, probably, from both layers of the decidua, and that it may proceed from any point of the ovum or the inner surface of the uterus. He believes that in abortion the hemorrhage is often pathological rather than traumatic in its nature, the result of decidual hyperæmia—an exudation from the distended and overloaded bloodvessels of the decidua, without rupture.

"This may be inferred," he remarks, "from the fact that a sense of fulness and weight is not unfrequently complained of previous to the eruption of blood, and also the further fact that the hemorrhage may precede the uterine contractions, and is always coeval with them, even in their incipiency, when they are too few and feeble to disturb the relations of the ovum to the internal surface of the uterus."

As to the causes of abortion, Dr. Miller, after enumerating the usual accidental causes, febrile diseases, drastic purgatives, and diseases of the ovum resulting in the death of the fœtus, concludes that, whatever influence these may have in bringing on abortion in the case of a perfectly healthy uterus, the most prolific cause of the expulsion of the ovum in the early months of pregnancy is a diseased condition of the uterus itself, particularly inflammation of the uterine mucous membrane, either of the cervix or body.

"Inflammation of the mucous membrane of the body of the uterus may, doubtless, directly excite contractions which shall expel the ovum, just as inflammation of the intestinal mucous membrane may directly excite increased peristaltic movements which shall expel the feces; but when the inflammation is limited to the cervix uteri (and this is most frequently the case), it acts as an abortive through the medium of the relation existing between the neck and body of the organ, alluded to in a previous chapter, by virtue of which impressions made upon the cervical nerves are reflected, through the spinal cord, upon the muscular fibres of the body and fundus, exciting them to contraction."

But, according to Dr. Miller, it is endo-uteritis more than inflammation of the cervix which exercises a morbid reaction on the ovum. When the mucous lining of the body of the uterus is involved in disease.

"It may be either altogether incapacitated to undergo transformation into the deciduous membrane or an imperfect metamorphosis of it may be the consequence. In the first case, abortion, and that speedily, must ensue, for the ovum cannot effect an attachment to the uterus, and may be degraded into a mole or a mass of hydatids; in the second, the disease may be communicated to the placenta and through it to the fœtus, deranging its nutrition and variously affecting its growth, so as to produce, perhaps, even monstrosities."

The series of facts and arguments adduced by Dr. Miller strongly impress his views as to the dependence of abortion, in a large number of cases at least, on inflammation of the lining membrane of the uterus, upon our attention. These views are consistent with a host of facts and observations that could easily be adduced. That they do not explain all cases of abortion not directly attributable to some accidental cause, or to diseased conditions of the system in which the uterus is only indirectly implicated, is very certain. There are cases of abortion which cannot be traceable to accidental shocks and injuries, to violence, constitutional disease, or any appreciable lesion of the uterus, either of its body or neck, and which would seem to depend upon some condition of the womb by which it is rendered intolerant of the presence of the ovum whenever the latter has arrived at a certain degree of development. At the same period, or very nearly so, of each succeeding pregnancy, we have known the ovum to be expelled, in patients in whom not a trace of uterine disease could be detected upon the most careful, thorough, and repeated examination, and who had never suffered from the slightest symptom of leucorrhœa. Whether we refer such intolerance of the uterus to abnormal irritability of the womb, or some other occult condition of the organ, it is very evidently unconnected with inflammation of the lining membrane of its body or cervix.

Dr. Miller presents a very good account of the resistive and palliative treatment of abortion, and under the head of its prophylactic treatment enters at length into the general subject of the treatment of uterine disease—of cervical inflammation, or ulceration, endo-uteritis, and uterine displacements. The therapeutic directions for the treatment of cervical and uterine inflammation and ulceration, in which are discussed the propriety of local depletion from the affected part, cauterization of the os uteri, intra-vaginal injections, etc., with the circumstances under which each is to be employed, the proper method of employing it, and the precautions necessary to its successful management, are all marked by good sense, but differ in no important particular from those ordinarily pursued by skilful practitioners. They are deserving, however, of a careful perusal on the part of all who are called upon daily to prescribe for the diseases peculiar to the female sex.

On the subject of displacements of the uterus, Dr. Miller takes the middle ground between those who consider them as invariably the result of inflammation, and those, on the other hand, who refer them to other causes, but consider them, when produced, to be productive of inflammation; he believes that they are sometimes a sequence of inflammation and sometimes its cause.

In relation to Dr. Simpson's pessary for the rectifying of anteversion, retroversion and flexion of the uterus, Dr. Miller holds the following decided, but in our estimation, very correct language.

> "This kind of mechanical contrivance for holding the uterus in its proper situation appears to me to be the most unphysiological of all others that have been proposed. The uterus, in its natural state, possesses great mobility, amounting almost to locomotion, by which it is enabled to accommodate itself to the various disturbing influences by which it is surrounded. Pressed upon by the contractions of the diaphragm and abdominal muscles, during great muscular exertions, it descends towards the vulva; pushed up during coitus, its fundus is tilted forwards and its cervix backwards, whilst considerable distension of the urinary bladder necessarily retroverts it; in a word, it readily adapts itself to its circumstances, whatever they may be. Now, to rigidly fix such an organ upon a metallic axis, and leave it no possibility of escape from the thousand impulsions which it daily receives, is to place it in a more unnatural predicament than any malposition can possibly be. The intra-uterine pessary is, however, not more unphysiological than unpathological. Rarely is inflammation altogether absent in these displacements, and sometimes it is very intense; to irritate the uterus, in such a state, by thrusting a foreign body into it to compel it to keep its place is a species of surgery which would not be tolerated in the outward parts. That some of Prof. Simpson's patients should not have been able to bear his pessary is not surprising; the wonder is that any of them could bear it, whilst it is a miracle that many of them got well."
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> "After all, the intra-uterine pessary fulfils its indication—albeit it performs its duty somewhat too sternly—that is, it keeps the uterus in the place allotted it by obstetric authority, with its metallic axis coincident with the axis of the pelvic brim. And this is more than I am warranted to say in favour of any other pessary that has been recommended for retroversio uteri, not even excepting Prof. Meigs' elastic annular pessary, so much lauded by him."
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> "If it should be inferred from the foregoing remarks that I have but a poor opinion of pessaries, the inference would be logical and just, for though I have tried all kinds of pessaries, not excepting Dr. Simpson's, I have derived but little benefit from them, whilst they have been a fruitful source of vexation to myself and of annoyance to my patients. As, however, I have admitted the validity of the indication to restore the uterus to its natural position, it may be reasonably demanded, if pessaries are unavailing or mischievous, how is the indication to be accomplished? After I had discarded pessaries in the treatment of endo-uteritis complicated with retroversion, I was led to conjoin repeated replacement of the uterus by the sound and cauterization of its cavity, whilst the organ is *in situ*, and by this method of treatment, which I may venture to call my own, have obtained more satisfactory results than by all other methods which I had previously tried."

The subject next treated of is the flooding of advanced pregnancy and incipient parturition. This accident forming, as it were, "a fit connecting link between the study of pregnancy and parturition."

These floodings are invariably the result of a detachment, to a greater or less extent, of the placenta from the inner surface of the uterus; the placenta in a large proportion of cases being abnormally situated at the mouth, as it is commonly expressed, of the womb. This circumstance leads of course to a consideration of the subject of placenta prævia, it being one immediately connected with the pathology of the floodings that are liable to occur during the latter months, or at the close of pregnancy. It is true that, according to our experience, accidental hemorrhage, that is, hemorrhage resulting from a partial or entire separation of the placenta, its position being normal, is of much more frequent occurrence than that dependent upon placenta prævia, nevertheless the consideration of the latter in the present connection is, we consider, most appropriate.

To acquire a correct notion of the nature of placental presentations, it is necessary to recollect that, "during the first six months of pregnancy, the cervix uteri preserves its cylindrical figure and keeps both its orifices, but especially the superior, tightly closed; it is plain, therefore, that the placenta is implanted originally over the cervix, but attached, nevertheless, to the parietes of the inferior part of the body of the uterus. It is with the body, and the body only, that it forms an organic union by the reciprocal passage of blood-vessels between them." It is not, and in the nature of the case, never can be implanted upon the internal surface of the neck of the womb. This fact Dr. Miller has rendered perfectly clear by a course of reasoning which appears to us to be irrefutable.

The mechanism of the hemorrhage which necessarily takes place in cases of placenta prævia is explained by Dr. M. from the development of the uterine parietes occurring more rapidly than the placenta can follow, causing, therefore, a separation of the maternal from the fœtal tissue, with rupture of the connecting vessels.

From various considerations, but more especially from the analogy of uterine hemorrhage often occurring under other circumstances of parturition, particularly *post partem*, where the placenta is wholly separated and expelled, Dr. Miller concludes that the great source of the hemorrhage, in cases of placenta prævia, and in other cases of partial and entire detachment of the placenta in the latter months of pregnancy, is the placental surface of the uterus itself.

Besides the unavoidable cause of hemorrhage in cases of placenta prævia, other causes that may operate to excite hemorrhage during advanced pregnancy are referred to by the author; the most frequent of these is perhaps

> "Mechanical violence of any kind, such as falls, blows, &c., sufficiently violent to produce detachment of the placenta from its normal connections. Probably, also, an excited state of the circulation, especially in plethoric habits, may suffice, in some instances, to bring about the same disastrous result. Irritation of the intestinal canal, whether induced by disease or the operation of drastic purgatives, exciting tenesmus and violent straining efforts, may also be reckoned among the causes of uterine hemorrhage."

We have given merely a bare outline of the leading views of Dr. Miller on this important subject of flooding—accidental and unavoidable—occurring in the pregnant female; for a full exposition of those views, which certainly demand a candid examination, and of the considerations upon which they are based, we refer to the work itself. The chapter devoted to the consideration of the subject of flooding, will amply repay the time devoted to its attentive study.

A very full and instructive account is given of the symptoms, diagnosis, course, and termination of flooding. In respect to treatment: in cases of accidental hemorrhage, Dr. Miller advocates the plan pursued by Puzos, a description of which, as it would appear not to be generally understood, we here present in the translation furnished us by our author.

> "The means of remedying this slowness of natural delivery, is to borrow something from forced delivery, which, I am satisfied from experience, is entirely practicable—namely, to increase the dilatation of the os uteri with the fingers, in the same gentle manner in which nature is wont to proceed. It is seldom that the loss of blood, produced by the detachment of the placenta, does not occasion more or less dilatation of the uterine orifice, the coagula about it acting as so many wedges, that distend it and dispose it to yield. This incipient dilatation has a tendency to bring on labour, and is sometimes accompanied by slight pains. But, inasmuch as the exhaustion and faintness arising from the loss of blood are opposed to the continuance of the uterine contractions, we must renew these when wanting, and increase them when too feeble. With this view, one or two fingers must be introduced within the os uteri, which is to be gradually opened by the employment of force proportioned to its resistance. These dilating efforts should be suspended from time to time, to allow intervals of rest. By this means, the uterus is roused to action, labor pains come on, and the membranes are rendered tense. The next object is to rupture the membranes without delay, to give escape to the liquor amnii, and bring about a diminution in the size of the uterus equal to the space the waters had occupied. The condensation of the uterus, that succeeds the discharge of the liquor amnii, presses the fœtus upon the os uteri, when stronger pains ensue, which, aided by the pressure of the fingers around the margins of the orifice, succeed in advancing the child. Meanwhile, the blood that would otherwise have escaped, is retained in the vessels by the contraction of the uterine fibres, and the compression to which they are subjected. By this co-operation of nature and art, the delivery is greatly expedited, and we may enjoy the satisfaction of saving both mother and child, who must have been lost if left to nature alone, and might have been destroyed by artificial delivery."

In cases of unavoidable flooding, from partial presentation of the placenta, experience, Dr. Miller assures us, has equally declared in favour of the efficacy of Puzos' plan of management. Where the placenta is implanted centrally over the mouth of the womb, some modification of the plan is, however, demanded. In these cases Dr. M. is opposed to the artificial separation of the placenta from its attachments, as proposed by Simpson and strongly advocated by others. He enters into a long chain of reasoning to show that whether considered in a scientific point of view, or tested by the results of the practice, so far as these have been made known, it does not present such strong claims as to warrant its being generally pursued. He is equally adverse in vertex presentations, in view of the unfavourable results that are so frequently observed in the cases in which it has been practised, to a resort to turning and delivery by the feet. The plan he ventures to propose is a modification of that of Puzos. This consists in "originating expulsive contraction of the uterus by the tampon or plug, and then puncturing the membranes, relying on the tampon to control the flooding until the liquor amnii is evacuated."

> "This," he remarks, "is the only method of treatment of which I have any experience, and I have employed it with uniform success, so far as the mother is concerned. This is strong testimony, but it must be mollified by the confession that my experience, in placenta prævia cases, has not been large; yet I have encountered them sufficiently often to have acquired some acquaintanceship.
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> "To expound this method of treatment and at the same time vindicate it, it must be observed that the tampon is preferable to manual dilatation, as an oxytocic, in placental presentations, because forced dilation could not be prac-

tised without necessarily still further detaching the placenta, giving rise to additional hemorrhage, all the more profuse on account of the non-parturient state of the uterus. Then, again, such manipulations would be objectionable because of the greatly more vascular and sensitive condition of the portion of the uterus contiguous to the os, which has been already mentioned as a reason why delivery by turning ought to be refrained from.

"In arousing the uterus to expulsive contraction, the tampon acts, I suppose, through the channel that has been more than once indicated in the previous pages of this work, viz: irritation of the incident nerves of the cervix, leading to reflex action of the fibres of the fundus and body. Explain as we will, however, the fact is generally admitted that the tampon is competent to excite uterine contraction and bring on labour. Should it fail (and what may not?) it may be reinforced by the puncture of the placenta, as recommended by M. Gendrin, which, considered merely as a means of bringing on labour, is excellent and wholly unexceptionable, and it will be observed that I am not, just now, speaking of the restrainment of hemorrhage, but of the excitement of labour. No case can occur, I think, in which the tampon, aided, if necessary, by puncture of the placenta, will fail to bring on labour, in a longer or shorter time, and where the tampon alone is sufficient, and labour is regularly established by its instrumentality, either the placenta must be punctured to evacuate the liquor amnii, or the finger must be pushed up beyond its margin to rupture the membranes during a uterine pain. I have myself usually practised the latter alternative, and always felt that my patient was safe when advanced thus far on the road to recovery.

"The supervention of labour—the evacuation of the liquor amnii—these, in their order, are the great bulwarks of a flooding woman, no matter where the placenta is implanted. It is a maxim in obstetrics that a *contracted* uterus cannot bleed; it might, I think, be amended and enlarged by adding that neither can a *contracting* uterus bleed when it is emptied of its waters—or at any rate, if it bleed, the hemorrhage is no longer dangerous.

"Notwithstanding that the tampon may be generally depended on to restrain hemorrhage, it is certainly possible that it might disappoint our expectations, and then the evacuation of the amniotic fluid by placental puncture may be had recourse to, as an auxiliary, on the authority of M. Gendrin. Should this fail, and the hemorrhage threaten to destroy the mother ere uterine contraction can be excited, there can be no doubt of the propriety of separating and extracting the placenta, according to the letter of Dr. Simpson's proposal, viz: solely with a view to the safety of the mother, losing sight of the child, whose interests are altogether subordinate. Such a procedure excludes, of course, delivery by turning, by which, as it has been shown, many maternal lives have been sacrificed that might have been saved, had the expulsion of the child been left to nature."

The subject of labour is next considered. We do not intend to follow the author in his very excellent examination of the efficient and determinative causes of labour, and the forces which co-operate in the expulsion of the contents of the gravid uterus. The entire chapter devoted to this branch of obstetrical physiology is replete with interesting views which demand a favourable consideration, and which, whether received throughout as established truths, or as merely plausible hypotheses, cannot fail to point the road to a more correct and intimate acquaintance with the subject.

Dr. Miller teaches that the real cause of the occurrence of labour at the completion of uterine and fœtal development, is that suggested by Dr. John Powers, the irritation, namely, of the cervix, and especially of the os uteri, arising from the contact, which then takes place, of the ovum with the latter. This he supposes to be proved, 1st, by the peculiar manner in which the uterine neck is unfolded during pregnancy, and 2dly, by the fact that the rectum and bladder are both excited to expel their contents by irritation of their orifices. The objections that have been made to this theory are candidly examined, and, with much apparent plausibility, refuted. To understand the real value of the cause assigned by Dr. M. for the inception of labour, regard must be constantly had to the true relationship of the condition of the neck of the uterus to that of its body at the different stages of pregnancy.

The phenomena of labour are the subject of the following chapter. They are clearly and fully detailed in the order of their occurrence.

In regard to the utility of the membranes, or pouch of waters, as it has been termed, both before and after the protrusion of a portion of the pouch at the uterine orifice, as a means of promoting the expansion of the os uteri and facilitating the progress of labour, Dr. M. makes the following sensible remarks. There is, it is true, nothing especially novel in them, corresponding as they do with the experience of nearly all skilful and observant practitioners. It may not, however, be improper to call attention to them on the part of the younger members of the obstetrical corps, inasmuch as their validity has been denied, and there are even some who incorrectly suppose that the premature rupture of the membranes and discharge of the waters will not tend to retard labour, or render it more painful. Some have even pretended that their early rupture will often facilitate and shorten it. That these latter positions are incorrect, Dr. Miller believes is shown by the following considerations:—

> "*First.* The integrity of the membranes before the pouch is formed is valuable, because the propelling force has then a more suitable medium wherewith to act on the cervix than any part of the fœtus would be. This medium is the waters inclosed by the membranes, which, adapting themselves to the shape and inequalities of the cervix, make more equable pressure on its fibres, and consequently subdue their resistance more equally; whereas any part of the child that can present is not so well adapted to distend the cervix equally, and hence, while some of its fibres may be benumbed by pressure, others are not conquered, but provoked to inordinate resistance, thus retarding labour by the irregular contraction which is excited.
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> "*Secondly.* The integrity of the membranes, after the pouch is formed, is beneficial until the dilatation of the os uteri is considerably advanced, if not completed; because the pouch, though it does not cleave like a wedge, opens the portals for the egress of the child in the gentlest manner. Should it rupture before the orifice is prepared to allow the presenting part of the child to take its place, the ruder contact that ensues not unfrequently irritates the cervix to a renewal of its opposition, and labour is thus protracted and rendered more painful.
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> "*Thirdly.* The pouch serves, by its presence in the uterine orifice, the most sensitive portion of the neck, to sustain and enliven the propelling contractions, upon the principle of orificial irritation. By its agency, these contractions are, in proper time, rendered truly *expulsive*, and the auxiliary forces of the diaphragm and abdominal muscles called into action. When the pouch ruptures, the presenting part of the child takes its place, and keeps up the requisite grade of irritation until the labour is completed. That this is no fancy sketch, the phenomena of shoulder presentations will abundantly prove. In these cases, the membranes frequently protrude in the form of a long, cylindrical purse, which inadequately stimulates the os uteri, and consequently the pains are feeble for an unusual length of time; and when at length they rupture, if the shoulder is not ready to occupy the orifice, as often happens, there is *an entire suspension of the pains for several hours.*"

In proceeding to a consideration of the mechanism of labour, the several presentations and positions of the fœtus in utero are first described. The classification of these as adopted by Dugès, is the one followed by Dr. Miller. The mechanism of labour in each of these is separately discussed. To the subject all that extension is given which its importance demands. Without a clear conception of the manner in which the fœtus, in each case, is transmitted through the pelvis, the course it takes, and the successive changes which occur in the condition and direction of the presenting part, as it is gradually propelled from the womb into the world, no one is competent to conduct properly and safely the most simple and easy case of parturition, much less to act promptly and efficiently in cases attended with delay or difficulty, or in which manual or instrumental interference is required to insure the safety of the mother or child, or both.

In the chapter devoted to this subject the views and explanations of the most authoritative masters in midwifery are laid down, but not implicitly followed. Dr. Miller has had the courage to examine and judge for himself, and to express his own conclusions, however these may differ from those of others. His explanatory and critical remarks appended to the account given of the mechanism of labour in each presentation are marked by much good sense. We have perused them with both pleasure and profit.

In the ensuing chapter on the diagnosis and prognosis of labour, a very good account is given of the means of ascertaining whether labour has actually commenced or not, and, when it is found that labour has actually set in, the manner in which the presentation and position of the child are to be determined, with some very judicious remarks on the prognosis of labour generally, and in each of the several presentations and positions.

It is very certain that in respect to the prognosis of labour, considered as to its probable duration, its favourable termination if left to the powers of nature, and the necessity for instrumental interference, there can be but few positive rules laid down that will admit of universal application. From close observation, the experienced practitioner acquires a certain tact by which he is able to form in each case of labour a very accurate judgment of its probable course, and to infer its favourable or unfavourable termination if left to itself. But this tact can scarcely be taught by books or oral instruction: it must be acquired from clinical experience, and from that only by such as have made themselves intimately acquainted with the form, structure, planes, axes, and normal dimensions of the pelvis, the anatomy and admeasurements of the fœtus in utero, and the physiology and mechanism of labour according to the presentation and position of the child, as well as with all those causes that may increase the pain of parturition, retard or arrest its progress, and the particular dangers incurred by mother or child, or both in cases of tedious, difficult, and obstructed labour. It is true that there are many cases in which the danger of trusting the accomplishment of delivery to the unaided powers of the uterus, or the impossibility of the birth of the child without manual or instrumental assistance, can be determined with almost positive certainty. The general rules by which the diagnosis and prognosis of such cases are governed are clear and explicit; ignorance of them would be highly culpable in any practitioner of midwifery.

The retarding and impeding causes of labour as they present themselves in its different stages are treated of by Dr. M. in his chapter on the management of labour. They are, in the first stage, obliquity of the uterus; the inefficient or impeded action of the organ; rigidity of the os uteri; and, in the second stage, inefficient and impotent action of the uterus.

In cases of obliquity of the uterus, Dr. M. insists upon the importance of restoring the os uteri to its natural position.

"This," he teaches, "may generally be effected by regulating the posture of the patient, enjoining her to lie on the side opposite that towards which the fundus inclines." When anterior obliquity exists, in a great degree, a properly adjusted bandage around the abdomen will materially contribute towards restoring the uterus to its natural situation.

"Should strict attention to posture, continued for a reasonable time, fail to correct the obliquity, and the labour in the meanwhile make but tardy progress, it is proper *to hook the os uteri by inserting the extremity of the finger within its orifice*, and draw it towards the centre of the pelvis, in the intervals of the pains. When a pain comes on, its tendency to relapse to its former position is to be resisted, with as much force as can be safely employed. If this tendency is too powerful to be resisted, the finger must yield to it; but, as soon as the pain ceases, bring back the os uteri to the centre, and again endeavour to maintain it there during the next pain. By cautiously and gently, but perseveringly, acting thus, the os uteri will, after a succession of centripetal and centrifugal movements, be restored to its proper place, and, the parturient forces having been brought to bear upon it, its dilatation will be effected as speedily as in ordinary cases."

"In deliberating upon the propriety of artificial aid, in cases of obliquity of the uterus," Dr. M. believes that, "the ability of nature ultimately to overcome the difficulties which they offer, should not be taken into consideration. The primary question is, can obliquity seriously retard labour? and this has been answered in the affirmative, even by Dr. Hunter, in his commendation of *patience*, but less equivocally by Dr. Denman and others of the same sect. Obliquity ought, then, to be remedied in all cases, when it unduly protracts the first stage of labour, if the principles of Dr. Hamilton should govern our conduct. Labours, rendered tedious from this cause, may undoubtedly hobble to their end, even to the expulsion of the fœtus in some way—nevertheless all the mischiefs that grow out of delay, are justly chargeable to the obliquity, and might have been averted, had it been remedied." * * *

*Awkward* and *unskilful* attempts at rectification of the obliquity may, Dr. M. admits, produce inflammation of the uterus, but this, he remarks, is chargeable to the *operator*, not to the *operation*, which need not cause pain, much less any such serious consequences. "For my own part," he adds, "I can safely declare that no mischievous effects of any kind have ever resulted, in my practice, from such tractions upon the os uteri as have been recommended, and the testimony of Dr. Dewees is equally decisive in regard to their safety and efficacy. Nay, this eminent practitioner deemed them of so much importance as to advise the introduction of the entire hand, well lubricated, into the vagina, in order to get hold of the os uteri with the finger, when it cannot be reached by a well-directed search in the ordinary way; and, under the circumstances that he has specified, I should not hesitate to follow his advice, although I have not as yet had occasion to do it."

In cases of inefficient action of the uterus the proper course, according to Dr. M., is, if any morbid state of the system can be reasonably assigned as its cause, to correct it; if the pulse is full and strong, blood should be abstracted; if the bowels are confined, they ought to be relieved by an enema, or a dose of castor oil. But if these means fail, or not being indicated, are not resorted to, the proper remedy is, *irritation of the uterine orifice by means of the finger, for the purpose of exciting more efficient contractions of the organ.*

After describing the mode of effecting this irritation, he remarks:—

> "Speaking from abundant experience, I can truly say that it is equally surprising and gratifying to observe the prompt effects of this manipulation, in many cases of the kind under consideration. Not unfrequently, a few movements of the finger are sufficient to impart such energy and aim to the uterine contractions, that the waters begin to gather, as the phrase is, and cause the membranes to protrude."

Dr. M. states that he has been in the habit for many years of employing, under the circumstances indicated, the manipulations he has described, and in the great number of cases in which they have been practised no evil consequences whatever have resulted, but labour has been greatly assisted, and many accidents, as he is firmly persuaded, have been averted, which would otherwise have happened from its undue protraction.

The chief course of impeded action of the uterus during the first stage of labour is, according to our author, premature rupture of the membranes. In the treatment of tedious labour resulting from this accident, he recommends if the os uteri be hot, tender to the touch, and rigid as well as tumid, the free detraction of blood. He believes, however, that the judicious employment of the fingers in aid of the uterine contractions is much more frequently indicated, and is often the only thing that can be done to assist the patient.

> "The fingers are *not* to be used," he observes, "to excite uterine contractions (for they are already too strong), nor to stretch the os uteri, but *to press upon its margin*, during the pains, in order that their counter pressure may keep it in as firm contact with the head as the rest of the cervix, and the orifice be thus brought within the pale of the dilating influence of the uterine contractions. Both Hamilton and Gooch highly recommend this practice, but their object is to *push up* the edge of the orifice over the head of the child; to liberate the band of the cervix, supposed to be incarcerated—a condition which, if it really existed, could scarcely be reached by such a procedure."

In cases of rigidity of the os uteri, Dr. M. recommends copious bloodletting, opiate enemata, the administration of tartarized antimony, the local application of extract of belladonna or of stramonium to the os uteri, tepid baths and demi baths. Should all of these means fail, or but partially succeed in overcoming the rigidity of the os uteri, and the cervix descend in advance of the head of the child, it is necessary, he remarks, to raise and support the os uteri.

> "As this is a measure of considerable importance, I shall endeavour," says Dr. M., "to explain how it is to be practised. The index finger is to be applied just underneath the anterior lip of the os uteri, and with its edge or palmar surface pressure is to be made, in the intervals of the pains, so as to push up the os uteri as high as possible, or the extremities of *two or three of the fingers may be used* in the same way. When a pain comes on, the tendency to descent is to be resisted, unless this be so strong as to require more force than it would be prudent to employ; in that case, the finger must gradually relax its counter-pressure and allow the descent to take place. But as soon as the pain goes off, the os uteri is to be pushed up again, and its descent is again to be resisted during the next pain. In this manner, acting with gentleness and caution, but, at the same time, with firmness and perseverance, the os uteri must be supported until it is sufficiently dilated to allow the head to execute its rotatory movement, and emerge from under the symphysis pubis.
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> "The principle upon which this manœuvre acts does not appear to have been well understood, even by those who have practised it. The support given to the os uteri prevents it from prolapsing, to be *backed*, if the expression will be allowed, by the floor of the pelvis, and places it in a position that will permit a portion of the head to become insinuated within it during a pain. The finger is not used to stretch the os uteri, as many writers direct, but to hold it up that it may be dilated by the head, which can then be pushed, by the uterine contractions, lower than the level at which the os uteri is held. The head dilates the os uteri far better than the finger could, because it acts upon the whole extent of the cervix, whereas the finger could act only on the circle of the os uteri."

In the second stage of labour, it is a fixed rule of practice with Dr. M. in all cases, without exception, to rupture the membranes, when, the dilatation of the os uteri being completed, the pains become expulsive, or even in the absence of expulsive pains with a view to excite them. The rule we think a good one.

It is in this stage that Dr. M. considers the production of anæsthesia by the inhalation of chloroform to be a boon of inestimable value to the parturient female by annihilating the pangs of childbirth, and thus removing the "certain fearful looking for" of its ordeal, by which the parturient female is so liable to be tormented.

> "I have been in the habit," he says, "of employing etherization in my obstetric practice, for nearly ten years, in natural as well as in difficult labours, and during that period, must have given it in several hundreds of cases, and I am not aware that mischievous effects have followed in a single instance. I have occasionally known it to diminish the energy of the uterine contractions and lengthen the intervals between them, to such a degree as to make it expedient to suspend its use for a time, or altogether to discontinue it. But in these exceptional cases, no harm resulted, and when the anæsthesia passed off —which it did in a short time—the labour resumed its course and progressed as though it had suffered no interruption."
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> "The relief afforded by etherization is not confined," he adds, "to the parturient state; it extends also to the puerperal state. I have often been struck with the remark, spontaneously made by patients who had been previously delivered without the benefit of chloroform, that they felt very much better than after their former confinements, having little or none of the muscular soreness and stiffness, or the fatigue and exhaustion which before they were accustomed to feel—and I think I may safely say that their convalescence is altogether better."

Dr. Miller very properly presents in strong relief the dangerous consequences that almost invariably happen to the child as well as to the mother by the imprudent administration of ergot to overcome the inefficient action of the uterus that may occur during the second stage of labour. There can be no doubt that, provided the os uteri is dilated, the vagina and vulva relaxed and moist, the presentation natural or such as to offer no great impediment to the birth of the child, that it is the vertex, face, or nates that presents, and there is no disproportion between the presenting part and the pelvis—ergot, judiciously administered, will seldom fail to excite powerful uterine contractions by which the child will be promptly expelled. But if all these conditions for a prompt termination of the labour are not present, it is very certain that the powerful and continued contractions of the uterus produced by the ergot, may prove destructive to child or mother, or both.

As it is not always an easy matter to decide confidently that all the conditions exist, which justify the exhibition of ergot, whenever there is a doubt upon this point, ergot should be withheld, while, according to Dr. M., the same manipulations that are recommended by him in cases of inefficient action of the uterus in the first stage of labour, may be had recourse to, and with marked effect.

In forming our opinion as to the necessity of artificial delivery in cases of impotent action or inertia of the uterus, occurring from exhaustion, the result of the long-continuance or severity of the parturient efforts, Dr. M. very correctly remarks that our attention should be directed to the evidences of uterine impotency; in proportion as these thicken, the necessity of delivery becomes more and more urgent.

> "It is not wise to wait until the urgency is extreme; and, in general, the earlier the woman is relieved by delivery the better, provided this can be done with facility and safety. Suppose, for example, the head of the child is presenting and has ceased to advance, while the uterus has evidently become impotent; suppose, moreover, this head is within easy reach of the forceps, and can be delivered without risk or additional pain to the mother—what would be the use of waiting until we are driven to the operation? But if delivery be not so easily and safely practicable, prudence requires that it should be deferred until the necessity of it is more pressing—so pressing that, in our judg-

ment, it is better to incur whatever risk the operation may involve, than wait longer."

The remaining chapters of the treatise are devoted chiefly to an account of instrumental delivery. The teachings of the author on this most important branch of practical obstetrics are, in the main, sound and judicious, while his directions are clear, simple, and precise, and well calculated, so far as it is possible by printed instructions, illustrated by well executed engravings, to point out, in the several cases and conditions in which instrumental aid is required to terminate labour, the manner in which that aid is to be applied—in a word, the proper application and management of instruments for the delivery of the child in each presentation and position.

Under the head of delivery by the crotchet, or craniotomy, Dr. Miller discusses the question as to the necessity of promptly relieving the uterus of its contents upon the occurrence of puerperal convulsions. He admits that, in these cases, bloodletting early performed is of great value, indeed indispensable, as a means of protecting important vital organs, particularly the brain, against the dangerous congestions which are consequent upon the convulsions, as evinced by the swollen veins and turgid features during the paroxysms, but he insists; and very properly, that it is futile as a means of arresting the convulsions. He consequently condemns the lavish waste of blood by large and repeated bleedings, which have been deemed, by many, essential, in cases of puerperal convulsions, to the safety of the patient, as not only useless but absolutely mischievous.

Having depleted to an extent sufficient to put the bloodvessels in the best possible state to bear the stress laid upon them by the successive convulsive paroxysms, which should be done as early as possible, Dr. M. believes that the lancet has performed all that it can do, and we must look to other means to insure the safety of the patient. The most important and imperative of these means, according to Dr. M., is the prompt delivery of the child. So important does he consider this measure to be, that he believes it is the positive duty of the obstetrician in cases in which the forceps cannot be applied, from the early period after the setting in of labour at which the convulsions occur, to deliver by craniotomy, whether we have complete assurance or not of the death of the child.

> "For this operation," he remarks, "it is not necessary that the os uteri should be so largely dilated as for delivery by the forceps, or even by turning the child, and hence it enables us to evacuate the uterus, and abrogate the cause that sustains the convulsions many hours earlier than it would be possible to apply the forceps.
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> "It is not recommended," he adds, "to have recourse to craniotomy in every case of parturient convulsions so soon as the operation is practicable. Not so; for it may be that there is no such urgent and instant necessity as to justify the operation. But if it be otherwise, and there are just grounds for our worst apprehensions, whilst, from the tedious manner in which the dilatation of the os uteri is going on, it is wholly uncertain how long we must wait before delivery can be accomplished by the forceps, then the perforator should be used, even if the child be alive."

Now, we candidly confess that we are not so well convinced, that, in any case of puerperal convulsions, the necessity for prompt delivery is ever so imperative as to justify the sacrifice of the unborn child for its accomplishment. It is very certain that by etherizing the patient, the convulsive paroxysms may be so completely controlled as to allow, in perfectly natural labours, sufficient time for the birth of the child to be accomplished by the unaided powers of the uterus alone; sufficient time, certainly to permit at least, the os uteri to become so far dilated and relaxed as to allow of the application of the forceps, and that without augmenting the danger of the mother.

In regard to turning, so as to deliver by the feet, Dr. M., in view of the many dangers both immediate or remote, which the operation, however skilfully and cautiously it may be performed, entails upon the mother, more than doubts its eligibility, under any other circumstances than that of shoulder-presentation, and he is strongly impressed with the belief that it ought to be strictly confined to such cases.

> "The object of it then," he remarks, "would be to correct such an aberration of the axis of the child's body, as precludes delivery; not to see-saw this axis, according to our whims or crude notions, and bring one of its extremities or the other to the os uteri, as best suits our fancy, as if to run our hand up to the fundus of the uterus, and gyrate the child in its cavity, were to be reckoned among the pastimes of obstetricy."

Dr. Miller is not strictly justifiable, we think, in absolutely restricting the operation of turning to cases of shoulder-presentation; we, nevertheless, admit that it is far too dangerous a procedure to warrant any one having recourse to it in any instance in which delivery may be safely accomplished by other less objectionable means.

Cephalic version, Dr. M. believes to be applicable to but a limited number of cases of shoulder-presentation, when "the labour is in its first stage—the os uteri being barely dilated, the membranes whole or recently ruptured, the uterine contractions not very powerful or decidedly expulsive, and the shoulder has not become impacted in the pelvis." He gives credit to Dr. Wright, of Ohio, for having given the best and most precise description of the operative manœuvre for the accomplishment of cephalic version in cases where it is possible to effect it. It justifies, he thinks, the claim of that gentleman, if not to originality, at least to the credit of having more clearly apprehended the object to be attained, and of more perspicuously pointing to the proper method of attaining it.

The general conclusions of Dr. Miller in regard to the comparative merits of the two plans of version—cephalic and podalic—are as follows:—

> "1. That in simple cases of shoulder presentation, either cephalic or podalic version may be practised, the former being preferable (provided it can be accomplished) on account of the greater probability of saving the child.
>
> "2. That, whilst cephalic version is not absolutely impracticable, in complex and even in complicated cases of shoulder-presentation, it is more difficult of performance and fully as dangerous, both to the mother and child, as podalic version, in one or another of its forms.
>
> "But granting, for the argument's sake, that cephalic version is, in its ultimate results, as eligible as podalic version, still I should contend that in complex, much more in complicated cases, it ought never to be had recourse to, because the sufferings of the patient are uselessly protracted by it. Even if there be not exhaustion of the uterus, it is impossible to know beforehand, in any such case, whether the child will be expelled by the natural powers or require to be delivered by instruments, thus subjecting the patient to the combined hazard of manual and instrumental delivery.
>
> "To me it seems that cephalic version, under the circumstances we are now considering, is an *unfinished* operation. The patient is made to endure all the pain and incur all the risk of manual delivery, for the sake of having the head of the child placed where it may be expelled by a second course of labour as severe and, perhaps, as prolonged as the first might have been, had the head originally presented instead of the shoulder.
>
> "When a woman has been long in labour, the uterus striving in vain to expel the child under a shoulder presentation, the necessities of her condition

> will not admit of any temporizing expedients or halfway measures; she needs to be delivered, and turning by the feet alone can give us that dominion over the labour, which is salutary alike for the mother and the child."

In the second section of Chapter XVI. will be found some excellent directions for the management of asphyxia in new-born infants—as to the proper procedure in cases of retention of the placenta from either atony of the uterus, hour-glass contraction, or morbid adhesion; and, finally, as to the treatment of flooding occurring subsequent to delivery. On this latter subject, the author's views and directions are particularly sound, and cannot be too strongly impressed on the mind of the young practitioner.

Two means usually resorted to for the control of *post-partum* flooding are held in very slight esteem by Dr. M.: we allude to ergot and the tampon. Of the first he remarks:—

> "There is no harm in giving the article, provided we put no trust in it. I mean to say that ergot might possibly do good; but that its operation is too precarious to justify any one in relying on it, to the neglect of the more certain resources which have been pointed out."

We should be sorry to inculcate any positive reliance on any one means for the control of the hemorrhage from the womb occurring subsequent to parturition, but we must insist upon the very important aid afforded by ergot in most of those cases where, after delivery, an undue discharge of blood is threatened or has actually commenced. We know of nothing which will so generally excite, and with the same promptness, that complete and permanent contraction of the womb on which alone in these cases the safety of the patient depends. We say nothing of the beneficial influence of the hæmostatic powers of the ergot, which are very far from being either problematical or inconsiderable. It is its specific properties as an exciter of uterine contraction mainly that recommends it as a remedy in *post-partum* flooding. So important a remedy do we consider it in this form of uterine hemorrhage, that we believe it should be early administered in every case in which we apprehend the occurrence of the accident.

In regard to the tampon, Dr. Miller remarks:—

> "To attempt to control hemorrhage from an empty and flaccid uterus, by plugging the vagina, is highly hazardous. We may, it is true, prevent the issue of blood by this expedient, but we can have no assurance that it will not continue to pour from the vessels and collect in the uterine cavity, until life is exhausted. It is better to contend with an open than a lurking enemy; for though we are fully able to cope with him, we might be circumvented by his wiles. Let the blood, then, have an unobstructed channel; we can, the more clearly, discern our patient's danger—which it is folly to hide from our eyes—and shall be incited to more earnest efforts to save her from impending death."

There is much truth in the foregoing remarks. The tampon is certainly useless in cases of flooding after labour. Until the cause of the hemorrhage—the flaccid state of the uterus—is removed, all attempts to control the external discharge of the blood are worse than absurd. Until the full and permanent contraction of the organ has taken place the female is in imminent danger, and should not be left by the accoucheur.

In the preparation of the treatise before us, while Dr. Miller has borrowed largely from the standard authorities on the theory and practice of obstetrics, he has not implicitly followed any master, even though by common suffrage he may be ranked among the most authoritative; but, observing, reasoning, and judging for himself, he has infused into the work so much of his own mind, that it may lay very legitimate claims to a certain character of originality which press it strongly upon the attention of the medical profession of the United States. In our examination of its several chapters we have met with much more to approve than to condemn—far more in relation to obstetrical principles and practical precepts and procedure to which we can cordially assent, than of which we have been obliged to doubt or absolutely deny the correctness.

The arrangement adopted by Dr. M. in the present treatise is somewhat different from that pursued in most of the standard works on the same subject. In some respects it has unquestionably its advantages, but we are not so certain that it is the one best adapted for a systematic treatise on obstetrics intended for the use of students.

The style of the work is throughout simple, clear, and sufficiently correct, though occasionally marred by colloquial expressions which neither give force to the author's meaning nor impressiveness to his practical directions.

Dr. Miller admits that he has not attempted to introduce into his pages "every topic, both large and small, that belongs to obstetrics;" still, in a work professedly aiming "to present, in as condensed a form as possible, an exposition of the cardinal principles of obstetrics, considered as a science and an art," we should certainly have expected to meet with an account of the management of twin cases, and of rupture of the uterus, and some notice at least of the important question as to the propriety of the induction of premature labour in those cases in which, from deformity of the pelvis, delivery at the full term is rendered impossible without the destruction of the child. Besides these omissions, we notice, also, the omission of any account of the circumstances which will warrant or imperatively demand a resort to the use of instruments in cases of labour. Some of these circumstances are, it is true, incidentally alluded to in the course of the treatise, but nowhere are all of them indicated with that fulness of detail which would seem to be demanded by the importance of the subject, the different opinions on many points connected with it entertained by distinguished obstetricians, and the serious mistakes that are every day made by practitioners, in consequence of the erroneous views they have formed in respect to it.

Without some notice of the several topics just alluded to, no treatise can be properly considered as embracing an exposition of "the cardinal principles" of obstetrics as a science and an art. We admit that full accounts of them all may be found in other works; nevertheless, one having similar pretensions to the character of a systematic treatise on "the principles and practice" of midwifery must be considered incomplete without them. There is as much necessity for their introduction as for that of the anatomical description of the pelvis and female organs of generation, and their obstetrical relations, which the author admits he has borrowed from the work of M. Dubois, and very properly, inasmuch as he there found so good a description that he was in some measure compelled to follow it in his desire to give a correct account of these subjects considered in an anatomical and obstetrical point of view.

Whatever, however, may be the faults of omission or commission in the work of Dr. Miller, it must, nevertheless, be pronounced a most able one, conferring the utmost credit upon its author, and fully entitled to that favourable reception we are well convinced it will receive on the part of the American medical profession. D. F. C.

# BIBLIOGRAPHICAL NOTICES.

Art. XVII.—*Transactions of American State Medical Societies.*

1. *Transactions of the Indiana State Medical Society, at its Eighth Annual Session, held in the City of Indianapolis, May* 19, 1857. 8vo. pp. 74.
2. *The Transactions of the New Hampshire Medical Society* (*Sixty-Seventh Anniversary*), *held at Concord, June* 2 and 3, 1857. 8vo. pp. 104.
3. *Transactions of the South Carolina Medical Association, at the Extra Meeting in Sumter, July* 9, 1856, *and at the Annual Meeting in Charleston, February* 4, 1857. 8vo. pp. 64.
4. *Transactions of the Second Session of the Medical Society of California, convened at Sacramento, February* 11, 1857. 8vo. pp. 43.

1. The first report comprised in the *Transactions* of the State Medical Society of Indiana, at its session of 1857 is on "the Practice of Medicine," by Dr. T. J. Cogley.

This report is published only in part; enough of it being given, according to a note appended to it by the committee of publication, "to show its most prominent characteristics." Now, if the entire report was of that excellent character it is pronounced by the latter committee, they have surely acted unjustly, as well to its author as to those for whose instruction it was prepared, in omitting any portion of it. It should have been published entire, or omitted altogether.

We are not however inclined, so far, at least, as we are able to judge of the character of it from the fragment in the transactions before us, to accord to the report of Dr. Cogley the high praise bestowed upon it by the committee of publication of the society. It contains, it is true, many judicious remarks and correct sentiments, but the account it presents of the actual condition of the practice of medicine, in reference to the few diseases of which it treats, is much too loose, general, and indefinite to afford much useful information to those to whom it is addressed. As an example of this, we may refer to the remarks of the reporter on the treatment of pneumonitis.

Dr. Cogley concludes his report with some general remarks on "the curative resources of Nature."

"One of the first surgeons of London, Mr. Skey, says," remarks the reporter, "'I am persuaded that, in proportion as we study disease, and make ourselves familiar with the curative resources of Nature, the greater will be our faith in her power of reparation, and in her desire to exercise it.' Men adopt different views of the power of the curative art. With some it holds the relation of a *vicegerent;* with others, of a handmaid. Our minds are not universally impressed with the conviction that *Nature cures diseases*, and not we; and that the province of the surgeon or physician, beyond which he cannot step one foot, consists in removing obstacles in her path. If this wholesome fact were impressed more deeply on the professional mind, would it not instinctively lead to a closer observation, and, of necessity, to a higher appreciation of her powers?"

That, in the larger number of instances when any organ or tissue becomes the seat of an acute lesion, its tendency is to return sooner or later to its normal condition and functions there can be no doubt. It is questionable, however, whether it is safe to trust entirely to this tendency. Between the plan of taking into the physician's own hands the entire management of every disease, and "turning nature out of doors," as uncertain and inefficient, if not mischievous in her curative efforts, and, on the other hand, trusting to her entirely for the cure of disease, there is a medium course to be pursued—neither entirely disregarding the curative powers of Nature, nor relying on them alone—but interfering just so far as is necessary properly to direct those powers to the production of the desired result; to aid them in their efforts to accomplish it, and to remove from them all obstacles to their prompt and successful action. And the skill of the physician is mainly exhibited in determining and pursuing this proper medium in the management of disease—neither interfering too much nor too little by the administration of active remedial agents.

The next report is on the "diseases of the eye and ear," by Dr. T. Parvin. After a sensible exposition of the importance of a careful study of these diseases—their nature, causes, diagnosis and treatment, and the necessity of provision being made, for a more full course of instruction in reference to ophthalmic and aural medicine and surgery, in our medical colleges, the report gives a concise but interesting sketch of the recent improvements in these especial branches.

The succeeding report is on "fractures and false joints," by Dr. Daniel Meeker. The subject of fractures, however, is alone embraced in the portion of the report before us; Dr. Meeker promising to complete the report at a future period.

So far as it goes, the report is a very sensible and instructive one. In its exposition of the improved methods of treating fractures it is perhaps somewhat too concise; it will nevertheless be read with interest and profit.

A report on the medicinal properties of "Veratrum Viride," by Dr. P. H. Jameson, is the one next in order.

In pneumonia, Dr. J. pronounces the veratrum to be an agent of great power and utility. He has often seen it quiet the heart and change the quality of the circulation—reducing the local inflammation, increasing the expectoration, and indirectly restoring the depurating functions of the liver, in a marked degree, without loss of blood, nausea, or salivation. It may be given, in different cases, he remarks, either after bloodletting, or along with quinine. For an adult he recommends the following formula. One fluidounce of Norwood's tinct. of veratrum viride, combined with one drachm nitrate of potassa and one ounce of water. A teaspoonful to be given every four hours, alternated, if deemed advisable, with small doses of mercury.

"This treatment alone," Dr. J. remarks, "continued for twelve or eighteen hours, in pneumonia, I have seen produce the most satisfactory results—the patient's condition being very similar to that observed, in such cases, after a copious bloodletting. The pulse will be softened, and have come down from a hundred, or a hundred and ten, to seventy or eighty, and this, in many cases, without nausea. If the remedy fails, the dose may be increased gradually till it is nearly doubled; this is seldom necessary. It is wrong and hazardous, I think, to force the pulse down at once by full doses, and needless to reduce it below what, in a given case, may be considered a normal standard, as to frequency. A greater reduction than this must in some degree interfere with the due performance of the functions of the system generally; and to cause it, is to tamper with a remedy whose power may not be fully understood. After the first twenty-four or forty-eight hours, the dose may be diminished one-third, one-half, or even more, unless the pulse should rise, and the symptoms grow worse; such being the case, the dose should be increased."

Dr. Jameson speaks of the veratrum as a good remedy also in many cases of typhoid fever, especially where there is a dry, hot skin, parched, dark brown tongue, and a quick, sharp pulse, with sleeplessness.

"Six drops, he says, may be given every four hours, combined with nit. pot., and if there is irritability of the stomach or bowels, a little morphia may be added. If the pulse is not reduced in twenty-four hours, the dose may be increased. When the pulse is as low as seventy, in the adult, I do not attempt a further reduction. Under this treatment the skin becomes moist and cool, the urinary secretion increased, and the tongue is less dry; indeed, all the symptoms of the disease are mitigated, and in some cases, I have no doubt, the duration of the fever is shortened. It is but fair to add, that in both typhoid fever and pneumonia I have sometimes, though rarely, administered verat. vir. so as to produce nausea, without the least impression upon the circulation, and consequently with no benefit to the patient. The remedy is valuable, not only in such cases of typhoid fever as before referred to, but in all cases where the pulse rises above one hundred, whether attended with restlessness or stupor."

Dr. Jameson has employed the veratrum in two cases of puerperal fever, with what he considered favourable results.

"A very rapid pulse," Dr. J. remarks, "is characteristic of puerperal fever; it is generally small, because the great current of blood is diverted from its natural channel, and thrown on to the weakened and congested capillaries of the inflamed peritoneum. These vessels cannot unload themselves until the heart's action is reduced. To accomplish this end, Dr. Gordon of the last century, Dr. Robert Lee, the younger Baudelocque, Dr. Meigs, and many others, advise us to bleed early and freely, and repeat as often as the pulse rises. However scientific this treatment may be, I believe it does not meet with the general approval of Western physicians. Bleeding modifies the character of the blood by lessening its vitality, which in this locality is not always desirable. With the verat. vir. the pulse can be as much reduced in frequency and kept down as long as the practitioner desires. With it puerperal fever may be, if not arrested at its outset, modified in its course, and effusion, that most fatal of its consequences, in many cases, prevented."

In regard to the safety of the veratrum as a remedial agent, considering the powerful influence it exerts over the action of the heart, the question is briefly considered by Dr. Jameson.

"Sometimes, though very rarely," he remarks, "verat. vir. produces nausea and vomiting, with great depression; but I have seen worse effects, and harder to correct, from antimony. There are sometimes sensations of choking or smothering, and difficulty in breathing; or there may be hiccough or dizziness, all of which soon pass away when the use of the remedy is suspended. Like mercury, antimony, opium, quinine, or chloroform, verat. vir. is not only powerful for good, but doubtless, in unskilful hands, sometimes potent for evil. That which can do no harm seldom does any good."

To the report of Dr. Jameson succeeds the history of a most interesting case of amputation at the shoulder-joint, by Dr. Calvin West.

The operation was performed on a lad eight years of age, who had recently suffered an extensive and serious injury of the entire arm of the right side, destruction of the deltoid and coroco-brachialis muscles, fracture of the humerus, close to, and extending, under the attachments of the capsular ligaments, into the shoulder-joint, and destruction of portions of the pectoralis muscles. On the thirtieth day after the accident, cicatrization was complete, and the patient discharged cured.

The two reports which follow, the one on bloodletting in pneumonia, and the other on purgatives in dysentery, give each, on the question embraced by it, simply the opinion of a single practitioner, which opinion is neither given with all the necessary details, nor with a clearness and definitiveness to render it of value as a guide for the practice of others.

The next report, "on medical education," by Dr. Chas. Fishback, contains much in relation to this most important subject, that is at once pertinent, judicious, and practical. We confess that we are not particularly pleased with his scheme of a free college, and a course of lectures to be continued through three consecutive years.

To the foregoing report succeeds a biographical sketch of Dr. Elizur Deming, by Dr. J. S. Bobbs.

The Transactions of 1857 close with the address of the President of the Society, Dr. Daniel Meeker. We had marked as particularly deserving of notice many paragraphs of this very sensible discourse, but must confine ourselves to that portion of the address which embodies the remarks of Dr. M. on the subject of the legal protection of the medical profession by legislative enactments. We present these remarks without comment.

"When," says Dr. M., "the popular mind is legitimately and well informed, whatever may be the opinions or wishes of the profession, I doubt not but the legislature will enact positive laws—protection not merely to the profession, but to the people." "When the people understand that their own interests in such enactments far transcend all that can accrue to the profession, surely their aversion to protective means should cease." "We have no doubt that judicious legal enactments regulating the practice of medicine in this State would result in general good to the people as well as to the profession—requiring some fixed standard of qualification for all those who practise the healing art." "Should the time arrive when efficient laws are enacted for the encouragement of the science of medicine, it will be through preliminary culture of the public mind by the agency of medical men. The people are more ignorant of the principles of medical science than they are of those of the other learned sciences." "The public ministrations of the clergyman are laid open for the appreciation of all. The majority of his congregation are competent judges of his pulpit efforts. Yet he is not allowed to act in this capacity until he has been examined and licensed by a competent board of officers of the church, appointed for that purpose. The lawyer is brought to a still severer test; all his legal papers must be drawn up with the most scrupulous technical accuracy, or disgraceful defeat and pecuniary loss is the result. Here all the great errors committed are open and apparent, involving the reputation and standing of the practitioner. He is brought into conflict with his opponent, before a sagacious court that fully understands all the principles discussed, and that instructs in its decrees which party is correct. The knowledge and abilities of the physician are not tested in the same open and direct manner. The character of his business is such as to more or less conceal it from public gaze. His dealings are with the secret and hidden things of life. He does not come in contact with any opponent, his labours are not watched and decided upon by the same sagacious tribunal. The grave may too often conceal his blunders; few around are competent to decide whether the protracted sufferings, the lost vigour, and the shattered constitutions of those who survive are the necessary consequences of disease, which could not have been prevented, or the result of inefficient or injurious treatment. Indeed, so erroneous is the judgment of those around him, that he is often praised for his errors and censured for his highest skill. He sees the bold and unscrupulous pretender, ignorant alike of the diseases he treats and the remedies he employs, exalted in public opinion for recoveries of which the least can be said is, that his bad management did not effectually prevent."

2. The *Transactions* of the sixty-seventh anniversary of the New Hampshire Medical Society open with the Address of the President, Dr. Francis P. Fitch. The subject of the address is a most important one—the want, namely, of sanitary knowledge.

That the health of a community has "a large and direct influence not only on the happiness, but also on the wealth of the people who compose it," is a truth which no one, who has examined the subject with the slightest degree of attention, will be prepared to controvert. That the health of a community may be materially improved, and the value of life in its midst considerably augmented, is likewise a truth, which has been fully established by the result of the judicious sanitary measures that have been carried into effect, of late years, in many of the cities and towns of Great Britain.

We may, without the slightest exaggeration, adopt the language of Lemuel Shattuck, Esq., in the report of the sanitary commission of Massachusetts, "that in every year in this commonwealth," and the remark may be extended to every other commonwealth throughout the land, "thousands of lives are lost which might have been saved; that tens of thousands of cases of sickness occur which might have been prevented; that a vast amount of unnecessarily impaired health and physical debility exists among those not actually confined by sickness; that these preventable evils require an enormous expenditure and loss of money, and impose upon the people unnumbered and immeasurable calamities, pecuniary, social, physical, mental, and moral, which might be avoided, and that means exist within our reach for their mitigation or removal; and that measures for the prevention will effect infinitely more than remedies for the cure of disease." And these views of the immense unnecessary waste of physical energy and of life from ignorance and carelessness, are fully confirmed by the highest authorities in England. In some valuable "conclusions and suggestions," appended to an elaborate report on "diseases and comparative rates of mortality," the British General Board of Health express most emphatically a firm conviction "that half the attainable period of human life is lost to all who are born."

But to avoid disease, to promote health and physical vigour, and prolong life amid a community, we must know what are the causes in each which tend to depress the physical vigour, impair the health, induce disease, and shorten the lives of its people; we must be put in possession of those facts upon which alone useful practical sanitary knowledge can be based. These facts comprise those derived from, 1st, a careful survey of the medical topography of every section of the State; 2dly, an intimate acquaintance with the personal and domestic habits and condition of the inhabitants, their occupations, and ordinary food; the location, condition, construction, and domestic economy of their dwellings, and the density of the population; 3dly, suitable enactments for securing, by adequate sanctions, the full and accurate registration of births, marriages, and deaths throughout the commonwealth, and the preparation and stated publication, at proper intervals, of a well digested and classified abstract of such registration.

We quote the concluding remarks of Dr. F. in the address before us, and earnestly press them upon the attention of every physician throughout the length and breadth of the land.

"The subject before us has increased in magnitude and consequence with every hour devoted to its consideration, and you will pardon the earnestness of my convictions if I may seem to have overstated its importance. Habits of thought, forced upon us by daily duties and anxieties, and confirmed by the prevailing tone of public sentiment, very naturally incline us to the conclusion that the appropriate, if not the exclusive sphere of the physician, is *the cure* of disease. But is that a complete or satisfactory definition of the purposes of our high vocation? Placed by our studies and pursuits upon a vantage ground from whence we discern dangers, imperilling health and life, which are unknown to others, shall we not prove false to the obligations we have assumed if we neglect to point out these dangers, and to show, as we may, how they can be averted? Here is presented an open and inviting field for the exercise of that active and enlarged spirit of benevolence and philanthropy which should everywhere characterize and adorn the votaries of medicine; and if we would in our day accomplish anything great or noble, in what way can it be so surely effected as in thus labouring for the improvement of our race?"

The first of the professional reports is that on Surgery, by Dr. George H. Hubbard.

The first subject noticed by Dr. H. is that of injuries of the head.

"Formerly," says Dr. H., "when an injury was inflicted upon the head, the first thing to be done was to bleed the patient, without stopping to inquire whether there was concussion, compression, or neither; and there can be no doubt that many lives have been sacrificed to a blind submission to this popular demand for bloodletting. We have learned, however, that the cases are few which demand bloodletting at all, and very few indeed which require it immediately after the injury.

Five interesting cases of the successful treatment of ununited fractures are related by Dr. H. The first of these occurred in a lad twenty-two years of age, the fracture being of both bones of the leg. It was managed simply by appropriate splints and perfect rest. Complete union occurred at the end of four weeks. The second was in a male, twenty-four years of age; the fracture being of the humerus. The operation of resection was performed, and the ends of the bone were then fastened together with gold wire, and the limb inclosed in a gutta percha splint, fitted to it previous to the operation, and encircling three-fourths of the arm, so as to leave space to dress the wound without disturbing it. At the end of three months, union was perfect. The third case occurred in a female, thirty-five years of age. The fracture was of both bones of the leg. It was managed by putting the limb in a gutta percha splint, and directing the patient to walk about the house with a cane, bearing as much weight as she could on the affected leg. In a week, she complained of pain and throbbing at the place of fracture. She was then directed to keep quiet in bed. In four weeks there was no motion at the fracture, and in due time the cure was perfected. The fourth case was in a male, age not given. The fracture was of the femur. Five months subsequent to the accident, there was evidently no ossific union, and the limb was shortened an inch and a half. "An attempt was made to break up the ligamentous union and bring the limb to its proper length, and then perform Brainard's operation, and thus effect a cure. The limb was accordingly dressed as for recent fracture, and extension attempted. As much power was applied as the patient could bear, and continued forty-eight hours. At this time there was no appreciable lengthening of the limb, but great pain, throbbing, and soreness were the result of the extension. This plan was abandoned, and, to take advantage of the inflammation thus excited, the starch bandage was applied and the patient kept quiet in bed a few weeks, and then on crutches a few weeks, the limb in the mean time getting more and more strength, so that at the end of three months she could walk with a cane, and is now perfectly cured, except the shortening of the leg." The fifth case was in a female twenty-five years of age. The fracture was of the humerus. Four months after the accident there was no union, but very free motion. Dr. Brainard's operation was performed Nov. 21, 1856, and repeated at the end of twelve days. In four weeks union was complete.

"The method of reducing dislocations of the hip-joint by manipulation," Dr. H. remarks, "long ago taught by Professor Nathan Smith, and lately brought prominently to public notice by Dr. Reid, of Rochester, N. Y., is becoming firmly fixed in the favour of the profession. Cases are continually being reported of its successful application. Discussion has fully proved that numerous surgeons, who were students of Dr. Smith, have been for many years in the habit of reducing dislocations in this manner, as they were taught by that distinguished surgeon. And reflection upon the philosophy of this method is having a great influence upon the reduction of dislocations of other joints. We are learning that but a small amount of force is necessary to reduce luxations, if conjoined with an intelligent manipulation properly directed to relax those muscles which are put on the stretch by the displacement of the head of the bone. New ideas and principles are daily developed, and we may safely say that, on this point, surgery is making improvement.

The reporter adduces the following case to illustrate what Nature will accomplish in extensive injuries of a limb, when carefully watched and slightly aided, as a lesson to the surgeon not to be over-hasty in sacrificing a limb that, without danger to the life of the patient, may become more serviceable and much better, in all respects, than any artificial substitute.

"Ellen Ryan, aged thirty years, jumped from a car, which was in motion, at the depot. Falling on the platform, she rolled off, and one foot was run over by the car wheel. The soft parts of the dorsum of the foot were entirely jammed off, the metatarsal bone of the great toe crushed to small pieces, and the remaining metatarsal bones separated from the tarsus, but otherwise uninjured. The soft parts of the bottom of the foot were uninjured. The great toe and its fractured metatarsal bone were removed, preserving as much as possible of the sole of the foot. The leg and foot were placed in a carved splint, which kept the foot in proper position, and the whole dressed with cold water. Profuse suppuration followed, and in about a week it became necessary to remove the second toe. By keeping the bones in contact, they became attached or consolidated together. The surface healed kindly, the contraction of the large cicatrix drawing the sole of the foot up around the edges giving the appearance of an Indian moccasin. At the end of about nine months, the foot became sound, and she resumed her place in the cotton-mill, and is now tending four looms and earning good wages. She walks the streets without a cane, and with scarcely a perceptible halt in her gait."

From the several interesting cases appended to this report we select the following, communicated by Dr. Wm. Laughton:—

"I was called to a child, seven months old, which had been screaming violently; it was then sobbing and restless. The mother stated that it had had several such spells. I discovered no particular cause for the condition. I prescribed turpentine mixture to be followed by an opiate. A day or two after, I was called again to the child in the same condition. At this time the mother directed my attention to the umbilicus, fearing hernia. On examining the abdomen, I discovered a dark speck about one inch above and to the left of the navel. It proved to be the open end of a sinus. By using a probe, I felt a hard substance about half an inch inside the opening. By a very little cutting upon a director, I was enabled to reach the foreign body, which I extracted with a pair of fine forceps, and it proved to be a darning-needle. The direction of the needle was transverse, and apparently between the fascia and external muscle. It was corroded and surrounded by pus, was easily extracted, and the child at once relieved. How long this needle had been there, or how it got there, no one knew. It was probably accidentally pushed in while handling the child, and escaped the notice of the mother in dressing. A knowledge of such cases should lead to careful examination of infants, especially in cases of convulsions or violent screaming."

A very instructive report on the "nursing sore mouth, its nature, causes, and treatment," is presented by Dr. T. T. W. Pray.

The main object of this able and instructive paper is to show the identity of the disease known as the sore mouth of nursing women with aphthæ. This identity Dr. Pray believes to be established by the following facts: Both diseases occurring epidemically without any discoverable connection with season and temperature; their having the same laws in regard to location—some places being entirely free from the occurrence of either; the similarity of their physical lesions, and their both affecting persons of similar constitutions and conditions of health—those of a lax fibre, thin in flesh, of anæmic appearance and scrofulous diathesis.

After a very full detail of the symptoms and progress of the nursing sore mouth, Dr. Pray asks, What is its nature, or what is the disease itself?

"We answer that, with our present information on this subject, we must pronounce nursing sore mouth and aphthæ alike. Upon their physical histories we cannot affirm them to be different. Their resemblance, both in their rise and progress, would tend to show, with no small degree of probability, their identity. This identity, however, resting upon this theoretical aspect of the case—which seems to us, nevertheless, the just interpretation of all facts known relative to this disease—may be held provisionally, until it be tested by future investigation as regards the physical lesions of the disease, by which such distinctions can be established.

"We regard the disease as local in its nature, occurring as an epidemic and sporadically, just as all epidemic diseases do. It is a frequent complication of idiopathic fevers and disordered states of the digestive organs. But the reason why vesicles and ulcers should be first seen in the mouth or elsewhere, we are unable to explain. The observations of Dr. Hale on this point are not inappropriate here. He says: 'From the great liability of the stomach to be disordered in this complaint, and especially from the fact that those remedies only are of permanent benefit which act upon the stomach, it would seem that it is chiefly through the intervention of that organ that the disease is produced. We know of no direct sympathy between the parts in which this affection first appears and the mammæ; while the stomach is very closely connected with the mouth and fauces on the one hand, and with the uterus, and all the other parts associated with the latter organ on the other.'"

In regard to the treatment of the nursing sore mouth, Dr. P. remarks, that different constitutions require different remedial measures. Tonics may be best adapted to one class of subjects, while in another an entirely opposite description of medicines are demanded. Scarcely two cases will be found alike, hence we can fix upon no general plan of treatment adapted alike, in all its details, to every patient.

"The first thing that should be attended to is the state of the stomach. If there be acidity, small doses of magnesia, or bicarbonate of soda, once or twice a day, or sometimes the vegetable or mineral acids will serve to correct this state. If constipation predominates, some mild laxative, such as a moderate purge of calomel and soda, Seidlitz powder, castor oil, sulphur and cream of tartar, will avert this difficulty. A gentle evacuation of the bowels is desirable in the earlier stages of this complaint, because it exerts a curative influence over the sensitiveness of the ulcerated surface. A prominent point in the treatment is to keep the bowels, especially in the commencement of the disease, in a soluble condition. But active and irritating purgatives should never be administered, on account of the liability of the mucous membrane of the intestinal tube to ulceration, and severe diarrhœa.

"The bowels being cleared, measures should be directed to subdue the feverish excitement existing in some patients. Generally there is no difficulty in effecting this, unless there be some constitutional irritation, occasioned by the existence of another disease lurking in the system. There are not many cases where venesection would be advantageous; it might be, indeed, dangerous to practise it." "It is far better, in uncomplicated cases, to use other medicines which eminently possess the qualities of lowering the pulse and allaying inflammation. Sometimes a gentle emetic, especially when the stomach is disordered, will be serviceable. For this, ipecac. is far the best.

"After the feverish state of the system has subsided, or even when there is slight exaltation of the pulse, we have given internally the following mixture. This has been used successfully for the last nine years, both in aphthæ and nursing sore mouth, and with like results; its virtues, doubtless, lie in its tonic qualities: Myrrh, ʒij; carb. potass., gr. xxx; aq. rosæ, ℥iij; sulph. ferri, ℈iss; spts. lavend. comp., ℥vss; sacch., ʒj; mix and compound in the same manner as the *mist. ferri compos.* of the U. S. Pharmacopœia." "We have given a teaspoonful of this three times a day, and at the same time used a wash of sulphate of zinc, six to eight grains to an ounce of water, for the mouth. If the physician is called early in the disease, there is no compound more serviceable." "In the more feeble subjects, other tonics are of importance. There are instances, after the acme of the inflammation is passed, where quinine seems to stay the progress of the ulceration, and render the mother able to nurse the child. Here we would remark that almost every tonic is beneficial. Quassia, iron in some of its preparations, iodide of potassium, arsenic (?), manganese, etc., have been used with success. When the mouth is largely involved, care should be had that all medicines be as palatable as possible, free from all irritating properties. It is desirable that they be prepared without the use of alcohol.

"Local applications have not unfrequently but a feeble power over the ulceration. Sometimes they seem to exert palliative influence, and occasionally produce permanent good. They are usually conjoined with medicines directed to the stomach. Those generally employed are nitrate of silver, sulphate of zinc, tannin, decoction of logwood, etc."

For the diarrhœa, the food should be unirritating from the onset. "When the evacuations are green, or of a sour smell, magnesia, or a mixture of this with rhubarb, may be administered; or pure castor oil, with some astringent, may be substituted. Prepared chalk, fluid magnesia, some of the vegetable astringents—such as kino, catechu, rhatany, or tannic acid—can be taken with profit. We have seen the use of creasote, six to ten drops to four ounces of water, check the discharges when everything else failed. Friction over the abdomen, flannel rollers about the body, rubefacients, especially if there is pain, anodyne enemata, and warm clothing, are highly important adjuvants."

"There are some cases of the disease which seemingly reject all treatment. The physician is called too late to check the progress of ulceration and the exhaustive diarrhœa, or else there is some other complication which thwarts all the appliances used to arrest the disease. To continue nursing will keep up a constant irritation in the system. Weaning the child will almost always cure the mother if seasonably undertaken. But there are instances where resort to this is inconvenient, to say the least. In such instances we must balance the risk taken, and in a good constitution nursing may be long continued. But where there are any indications of exhaustion, or an anæmic state of the system, a regard to the health of the mother should be paramount, and she should give up nursing at all hazards. Even then, it will be difficult sometimes to save life. In a majority of cases, however, there is no such danger, and, although weaning is admissible when circumstances admit it, it is not indispensable, and women worry through after much exhaustion and suffering, and after all is over their health does not seem to be permanently injured thereby. As a general rule, nursing should never be persisted in, when remedies are inefficacious to stop the course of the disease. The length of time which one must wait to test the inefficiency of remedies must of course vary according to the urgency of the symptoms."

"When the condition of the patient will permit, the diet should be mild, generous, and of easy digestion; such as a good supply of fresh, tender, animal food, milk, milk-porridge, rice, eggs, and good vegetables. Ale and porter will assist digestion, and their use cannot be well dispensed with. Sometimes broths and soups do not disturb the healthy operations of the stomach. Food of an undigestible nature should never be prescribed, as it will produce only evil."

In regard to preventive measures, let the female, says Dr. P., "exercise frequently in open air. Keep her bowels in a soluble condition. Let her food be simple and nutritious. Employ her mind upon subjects that will interest, rather than upon the annoyances of gestation, and, in fine, let there be a free use of everything which can amuse and make the patient cheerful.

"To recapitulate: From the discussion of this subject, we arrive at the following conclusions:—

"1st. Nursing sore mouth is not a *nova pestis.*

"2d. It is not indigenous to this country.

"3d. It is often of an epidemic character, and therefore governed by the same laws as govern other epidemical diseases.

"4th. It is not anæmia, nor is it occasioned by the loss of a particular principle of the blood; nor can it be scorbutus, but most probably the disease in question is aphthæ of a severe and obstinate form."

The report on practical medicine, by Dr. W. W. Brown, contains a brief sketch of the principal epidemical diseases prevalent in the city of Manchester, from the year 1853 to 1857 inclusive.

The diseases noticed are, cholera infantum, malignant cholera, dysentery, typhoid fever, scarlatina, pleurisy, and pneumonia.

The report contains much that is interesting, but nothing that can be regarded as particularly novel. On the subject of venesection in pleurisy and pneumonia, in regard to which some very heterodox opinions appear to be prevalent among the practitioners in different parts of the United States, Dr. Brown holds the following decided language:—

"During the past winter, pleurisy and pneumonia have prevailed to a greater extent than is usual here, and we are sorry to be obliged to acknowledge the fact, that many of our physicians are now, from some cause, *too timid* or *too cautious* in the use of the lancet. One of our regular physicians was heard to remark recently, that he had not bled a person for six years! He was asked how he cured pleurisy and pneumonia? With Dover's powder and tincture of aconite, was his reply." "The argument is, that diseases have changed, and require a milder treatment than formerly; but the argument, *cæteris paribus*, is without foundation. It is evident that a person of a robust constitution requires depletion as much in these days, while labouring under acute inflammation, as he would have twenty years ago. And furthermore, we are constrained to say that, in our belief, many persons die annually in the city of Manchester, of acute inflammatory diseases, treated by various quacks, or in a feeble, inadequate mode by some of our regular physicians, that might be cured by proper, energetic, and decided treatment. If the people choose to be led astray by the multifarious varieties of empiricism of the present day, let it never be said that we are forsaking the accumulated light of science, made brighter and brighter by the addition of the labours and experience of all the illustrious sages of our profession, from the days of Hippocrates to the present time. The time will come, if not in our day, when the medical profession will have less of charlatanism connected with it than at present, for 'truth is powerful and will prevail.'"

The subject of an oration delivered before the New Hampshire Medical

Society on the first day of the session, the transactions of which are under consideration, by Dr. Thomas H. Marshall, is "the contributions of quackery to true medical science." We like the general tone of this oration. We freely admit with its author, that, to the truly scientific physician, "all means are his." "His is the search for truth, and he will not refuse the boon by whatever hand it may be offered. But in doing so, he takes nothing on trust. 'Prove all things, hold fast that which is good,' is his motto. His facts must not be *seeming*, but *fixed facts*, and his conclusions will be based, not upon *one, or a few* of those, but upon many, carefully collated and rigidly analyzed." We are not disposed to deny that some few useful remedies, an occasional happy formula have been introduced or made conspicuous even by empirical pretenders; and we have no objection to receiving these or any other really valuable hints that may be offered us by outsiders. We agree with the late Dr. Wistar, that "if an ignorant nurse should happen, in the course of long years of practice, to stumble upon something that may be advantageously employed for increasing the comfort or assuaging the suffering of a patient, it would be folly in us to reject it, because of the humble source through which it reaches us." But we should not feel disposed to dignify what means or hints we thus derive as contributions made by ignorance or quackery to true medical science. Dr. Marshall speaks of valuable "modes of practice" as having been introduced or rendered conspicuous by empirical pretenders. Of these we must plead our entire ignorance; we are not aware of any valuable plan for the treatment of disease, the parentage of which can be fairly traced to such a source.

While we freely admit that positive as well as negative good has accrued to legitimate medicine from the very ignorance and recklessness of quackery, we nevertheless insist that Dr. Marshall has conceded far more credit to certain of the quackish practitioners of the day for the benefits they have indirectly conferred on true medical science, than they justly deserve.

We are not prepared to credit quackery with the slightest contribution made to legitimate medicine. If, perchance, from its blind ministrations some useful hint may be derived, developed, and properly applied by the scientific physician, good and well; but as the boon thus conferred cannot be received as the legitimate fruit of quackery, let us not be over anxious to watch its empirical practice as one of the sources through which sound therapeutics is to be benefited and advanced.

In a report on the diseases of Strafford District, Dr. Levi G. Hill notices the unusual number of cases of puerperal convulsions that occurred during the year 1856, and the fact that, after parturition, recovery was not as favourable as usual.

Of puerperal convulsions he relates the history of nine cases. Three of these terminated fatally. The convulsions occurred at different periods before, during, and subsequent to parturition, principally in young subjects. In all the cases bleeding and purgatives were employed, and in most of them chloroform and ether by inhalation.

"If we inquire," says Dr. Hill, "into the philosophy of these cases, we shall see the importance of *unloading*, so to speak, the womb, bowels, and blood-vessels, as soon after the convulsions occur, as prudence will permit, if indeed we do not anticipate and prevent them by suitable evacuations."

An interesting article, containing miscellaneous observations in obstetrics and diseases of women, is communicated by Dr. Wm. Henry Thayer.

In an inquiry into the effect upon the duration of labor produced by artificial rupture of the fœtal membranes, Dr. T. arrives at the conclusion that a rupturing of the membranes on the part of the practitioner is rarely called for, either after or before complete dilatation of the os uteri. When the membranes are so exceedingly tough as to delay the labor, as we may judge to be the case, when with a large pelvis, a full dilatation of the os uteri, and regular and sufficiently active pains, they remain unbroken, there can be no doubt as to the propriety of their artificial rupture. Where, also, the labor is impeded by the large amount of liquor amnii, or where there is a large quantity of fluid between the amnion and chorion, the artificial rupture of the membranes will tend to expedite delivery.

To guard against flooding, Dr. T. recommends the administration of ergot immediately after the termination of every case of labor, and we consider the recommendation a safe and judicious one.

Dr. T. does not believe it to be necessary to wait until pulsation in the cord has ceased before applying the ligature, and dividing it. From a careful consideration of the subject, he concludes, that if respiration be fully established in the newborn infant, the cord may be cut, whether pulsation has ceased or not in the cord. We fully agree with him as to the correctness of this conclusion.

"There are cases," he properly remarks, "in which the establishment of respiration appears to be actually prevented by too full a state of the vessels, and the child would perhaps never breathe if the umbilical cord were not divided."

Dr. T. relates a case of conglutination of the os uteri, the result apparently of extensive and long continued ulceration of the cervix uteri, in which delivery took place after the incision of the cervix.

3. In the minutes of the extra meeting of the South Carolina Medical Association we meet with some interesting remarks on the employment of chloroform. Dr. Mayes has seen prompt relief produced in colic, and similar affections from a few drops of a solution of camphor (one drachm) in chloroform (one fluidrachm). As a local application in neuralgia, Dr. J. B. Witherspoon highly recommends the following: ℞.—Camph., sulph. morphiæ, āā ℈j; chloroform ℥j; lard ℥ss.—M. Dr. A. N. Talley has given the chloroform by inhalation in lead colic with good effect, using at intervals, as a local application, an ointment composed of chloroform ʒij; oxyd. zinci ʒss; cerat. simpl. ℥j.—M.

In the address, at the opening of the annual session by the president, Dr. Horlbeck, it is very justly remarked, as one of the impediments to the success of medical associations, that "we are too apt, in the inception of an undertaking, to expect extraordinary results to arise at once from it, and when we are disappointed at the non-fulfilment of overwrought anticipations, to sink to a proportionate state of depression."

Unfortunately, too many of those who enter into our medical associations, in full confidence that every desired reform in the condition of our profession is to be promptly effected through their agency, overlook, or at least greatly underrate the silent but not less beneficial influence these associations constantly exercise, and not experiencing through their action, at once, results commensurate with their exaggerated anticipations, whether in reference to what they esteem the chief good of the medical profession, or in the promotion of their own individual interests, they permit their zealous co-operation as members gradually to flag, and finally to become extinguished.

Well conducted and zealously supported medical associations, independently of their agency in the accumulation, collation and arrangement of facts, adapted to improve and extend the science and the practice of medicine, are promotive of influences that are not less beneficial to the true interests of the members of the profession, individually and collectively.

In the appendix to these Transactions, is contained a paper read at one of the sessions of the society, by Dr. J. A. Mayes, presenting observations on the medical properties of the *gelsiminum sempervirens*, or yellow jessamine. The following concluding paragraphs exhibit a summary of Dr. Mayes' opinion of the remedial properties of the gelsiminum drawn from actual observation of its effects.

"I regard it as a direct sedative; more safe and manageable than *veratrum viride*, and more generally applicable in practice.

"I esteem it a most valuable adjuvant to other treatment in all cases where high arterial excitement exists, in which it is desirable to lessen the frequency of the pulse and to calm excitement, and where, as in the case of injuries, it is desirable to lessen the irritability of the nervous system; also, in that troublesome hysterical exaltation of the nervous sensibilities, so often met with in enervated females, its value cannot be too highly estimated.

"In short, it is a specific for no particular disease, but an admirable adjuvant in the treatment of nearly all.

"With its poisonous effects when given in overdoses, I have no acquaintance, but do not doubt the possibility of its doing harm in the hands of the careless."

In a paper by Dr. Ware, on the use of mercury in typhoid fever, we find a very pointed protest against the employment of this, with many, universal febrifuge, in that disease. The doctor founds his opposition upon the essential difference there exists between the pathological character of typhoid fever and those affections in which mercurials manifest their happiest effects, and upon the efficacy of remedies of a totally different character, namely, stimulants and anodynes.

It is unquestionably true that from mercurialization there is no disease in which, as a general rule, less benefit is to be anticipated than in typhoid fever, and yet in the early stage of this fever, and in certain of its complications where a loaded condition of the bowels is manifest, mercury constitutes one of our best and safest purgatives; under certain circumstances, even when administered so as to produce a gentle alterative impression, it will be found decidedly beneficial.

The oration delivered by Dr. Smith at the annual session presents, in clear, forcible, and manly language, a general sketch of the objects and efficiency of medical organization, and an urgent appeal to the physicians of the state to unite in their furtherance and support.

4. The physicians scattered abroad in California deserve credit for the early efforts made by them to effect an organization, so as to "bring together, from every section of the State, the regular members of the profession; to harmonize their views; to elicit reports on the character and treatment of the various diseases appertaining to the State; to encourage habits of careful observation and patient research, and thus to elevate the moral and scientific grade of the profession individually and collectively." The Transactions of the two annual sessions that have been held of the California State Society evince a degree of zeal and industry that was scarcely to have been expected when we take into consideration the condition of the population amid which the physicians who have gone there are located, and the adverse circumstances by which, in the early period of their immigration, many of them were necessarily surrounded. The results of organization, have, we are assured,[1] been already realized among the physicians of California, by the infusion into their ranks of a proper spirit of emulation; by the establishment of the most useful and friendly relations between the members of the profession throughout every portion of the State, and the inauguration of a system of extended observation and research, which cannot fail in due time to redound to the advancement of science.

The subject of the annual address by Dr. E. S. Cooper, of San Francisco, is "deformities of the locomotive apparatus," or, more properly, the description of an apparatus by which patients labouring under chronic deformities of the lower extremities are enabled to walk about during their treatment.

"I do not claim," Dr. C. remarks, "that the series of apparatus which I have invented will remove all difficulties and secure a complete exemption from failure in attempts to effect an entire cure of all cases; but I do claim that they simplify the treatment, and can be made to succeed in cases when failure must be unavoidable by any other process heretofore brought into general use among the profession, and I claim that they do so by possessing at least the following superior merits:—

"1st. In distributing the pressure nearly equally over the entire surface of the deformed limb, and thereby obviating the danger of sloughing, as well as lessening, to a very great extent, the attendant pain produced by the use of all ordinary apparatus.

"2d. By being so simple in their construction as to be readily applied by any practitioner of ordinary ingenuity.

"3d. Being nearly like the ordinary boots, which all experience proves to be better adapted to walking than any other; the ultimatum of our treatment being to bring the foot as nearly as possible into proper condition to bear with grace and ease the boot or shoe of everyday use.

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[1] Report of the Corresponding Secretary, Dr. T. M. Logan.

"4th. By rendering walking the great agent of cure; being so arranged that many steps the patient takes places the contracted tissue in a state of increased tension, let the deformity be of what variety it may.

"5th. In the great ease and comparative comfort with which they are worn, and by which patients are rendered more persevering in their use. This is, of itself, a desideratum, because in all very obstinate cases the orthopædic surgeon has sufficient need of the greatest perseverance on the part of the patient.

"In fact, there are many cases susceptible of complete cure, and cause little inconvenience by the use of apparatus, which keeps up slight but regular pressure for two or three years, allowing the patient in the mean time to go about as usual, in which any attempts to effect an immediate change in the parts, either by knife or apparatus, would jeopardize the patient's life."

The apparatus of Dr. C. is thus described:—

"The spring boot is very like an ordinary boot, made on a last, two or three sizes larger than the foot. The boot is open in front from the top to the toe, but has buckles and straps by which it can be made to fit closely to the foot and leg. The boot leg is studded with whalebone splints, which make it very stiff. Two tin cups are fastened to the toe, one on either side. A tin splint reaching from near the middle third of the thigh to the lower part of the calf of the leg, being longer or shorter, owing to the degree of flexion, or in different cases. A tin cup, on either side of this splint, is fixed on a line with those of the boot toe. These cups contain spiral springs made of steel.

"The splint is fixed to the back part of the limb by broad leather straps passing around the knee, which are kept in their proper position by loops placed at short intervals over the surface of the splint. Wooden rods, of light quality, rest upon the springs above and below, so that in the beginning of every step the rods are made to compress the springs, which, reacting, complete the step with very little effort on the part of the patient. When the apparatus is properly adjusted, it is almost impossible for the patient to sprain the limb by a misstep, even if it should be caused by a sudden descent of two feet or more. In fact, the limb is so protected that, unless the patient fall directly upon the front part of the knee, he is not liable to injury by moderate walking, let the joint be as weak as it may."

In a paper on typhoid or enteric fever, Dr. Ira E. Oatman remarks that

"This disease prevails along the Pacific coast and around the Bay of San Francisco to some extent, in the malarious valleys of the Sacramento, and extensively in the higher altitudes of the mining regions and the mountains. It mostly affects the young and middle-aged, and is exceedingly variable in its mode of attack, its prevailing symptoms, its progress, and termination; its fatal effects being often wrought before any positive indications are manifested of their existence. Although it is stated in books that the disease is easily controllable by treatment, I do not often find it so; for even the cases which recover seem to be little affected by the treatment employed. I have treated this disease medically and hygienically through its whole course, and almost wholly without medicine, with little apparent difference in the results. Yet I am fully convinced that medicine is beneficial in most cases—if not at all times, still it is highly useful to meet the various indications during its continuance. With a single exception, the purely expectant treatment has given me the best satisfaction.

"This exception is important, as it is not usually indicated by the direct symptoms, but must be determined from a knowledge of the history of the case. If the patient has resided in a malarious district within many months of the attack, whether the fever is obviously remittent in its type or not, it is generally benefited, in a majority of the cases, by the liberal use of quinia sulphas. Those who do not improve during its administration are, to say the least, not injured by it. I usually combine with it the pulv. ipecac. et opii, in the proportion of gr. v of the former to iv or v of the latter, for each dose, and, the bowels being freely open, give this dose every four hours for about two days. This treatment, in some cases apparently typhoid, will entirely eradicate the fever, and with it all its consecutive affections, proving that the fever was purely malarious in its origin. But when the *most* favourable result does not follow its use, still the heat of the skin abates, the aching pains in the head, back, limbs, etc., subside, the tongue and mouth become more moist, and the pulse reduced in fulness and in frequency, from 100 or 120 to 70 or 80 in a minute.

"This state often lasts for two or three days, thereby removing, in a great measure, for the time being, the danger of serious local disease. But if the fever is not purely malarious in its origin, or if so, and follicular inflammation is already fully established in the mucous membrane of the bowels, then the avenues through which the nutrient properties of the ingesta reach the blood being partially or wholly obstructed, the blood becomes impoverished, the brain and nervous system become irritable, the heart and arteries act more rapidly, and we have a fully developed case of enteric fever, but one more simple and less dangerous than it would have been without the action of the quinia, &c., in removing the malarious influence."

An interesting case in which both the internal iliac artery and vein were included in a ligature, is related by Dr. E. S. Cooper. No bad effects resulted, the patient recovered completely and rapidly. Some remarks are appended to the case in reference to the propriety of ligating "the satellite veins in conjunction with the arteries which they accompany, in all cases in which a ligature is demanded."

The report of the committee on obstetrics, by Dr. H. Gibbons, of San Francisco, presents a hasty sketch of the general causes which render so common the prevalence of uterine disorders in California. These causes, according to the reporter, are such as have a tendency to produce an undue excitement of the female organs of reproduction. The potency of these causes

"Was soon observed in the frequency of conception among women who had for years ceased to bear children. It was not uncommon for friends who had relinquished the duties of the nursery for five, ten, or even fifteen years to find themselves unexpectedly called to resume those duties. It was also exhibited in the frequency of twin births, the greater tendency to miscarriage and to uterine hemorrhage, the derangements of the menstrual function, and the countless host of neurotic maladies of uterine origin, so harassing to patients and so perplexing to physicians.

"That infants at birth are above the average size in California is attested by many accoucheurs. Ten pounds is a very common weight, and in my practice of six years two children have been born weighing respectively 12½ and 13 pounds, either of them larger than any child that I had delivered in nearly the same range of obstetric practice in Wilmington and Philadelphia during twenty-two years." "Twins, I believe, are indisputably more frequent than in the old States, and triplets are by no means unheard of."

Dr. Gibbons presents a mournful picture of the practice which prevails among pregnant females of procuring abortion to rid themselves of the pain, cost, and annoyance of gestation, parturition, and lactation.

"The extent," he observes, "to which this practice prevails in California is disgraceful. Married women often appear much more alarmed to find themselves pregnant than maidens. Every physician must have encountered the most anxious and distressed inquiries on the subject. Not only does the practice pervade the circles of fashionable life, but it exists among women who acknowledge in the general tenor of their conduct the restraints of morality and religion."

"Miscarriages," Dr. G. informs us, "were more frequent six years ago than now. In San Francisco they were attributed to the hilly and sandy walking. Hard work at the wash tub and ironing table, and other drudgery, to which delicate women have been subjected, aided in producing the result. But there was evidently an inherent cause deeper than this—a strong tendency to uterine hemorrhage has been observed in connection with miscarriages.

"Beyond all due proportion to the number of births is the number of stillborn children. This is partly owing to the frequency of untoward presentations, and of preternatural and complicated labours. But mismanagement and neglect do much more mischief. This branch of practice is greatly in the hands of ignorant women and inexperienced men, whose services are valued because they are cheap. Human life in general being set at a low valuation in California, such results might naturally be anticipated. Besides, there is a want of the proper maternal instinct, or, at least, a low degree of it, in a very large number of women. They are averse to the care and burden of offspring, and their indifference or dislike has its natural results, not only in the large proportion of stillborn children, but in the great mortality after birth and during infancy.

"Mammary tumours and abscesses are common, and, as a consequence, many infants are deprived of the natural and most healthy fountain of nutriment. This adds slightly to the infantile mortality."

"Apart from the direct influence of the uterine system on the brain and nerves, which operates with undue force, the nervous organization is subjected to greater excitement from other causes in this country than in older settlements. From the exalted sensibility thus established, it might be inferred that puerperal convulsions are not uncommon. Such appears to be the fact. I may add, that chloroform and ether have relieved a number of unpromising cases of this description. In one instance in my charge about two years ago, I kept the patient for several hours under the moderate influence of ether. The remedy was resorted to after the failure of other potent remedies, and to it I attribute the saving of a valuable life. Conjoined with venesection, the anæsthetic treatment is generally safe and efficacious, if not pushed too far.

"Fever is a common attendant on the puerperal state. In the large proportion of cases it assumes an intermittent form, or a remittent bordering on an intermittent, and yields readily to quinia. Peritonitis, if it exists at all, is not often a prominent symptom in these cases."

A case of successful ligature of the common carotid is related by Dr. R. Beverly Cole, of San Francisco. The ligature was applied for the arrest of hemorrhage, in an extensive incised wound of the posterior and left side of the neck, opening the pharynx and larynx, and in its course severing the internal carotid or one of its larger branches. In five weeks subsequent to the operation, the patient was attending to business as usual. D. F. C.

## Art. XVIII.—*Reports of American Institutions for the Insane.*

1. *Of the Friends' Asylum, Philadelphia, for the fiscal years* 1855–6 *and* 1856–7.
2. *Of the U. S. Government Hospital, for the fiscal year* 1855–6.
3. *Of the Ohio Central State Asylum, for* 1856.
4. *Of the Ohio Northern State Asylum, for* 1856.
5. *Of the Ohio Southern State Asylum, for* 1856.

1. "The house," says Dr. Worthington, of the Friends' Asylum, Philadelphia, in his report for the fiscal year 1855–6, "has been as full, throughout the year, as was consistent with the comfort and welfare of its inmates; and, perhaps, during no similar period have the designs of the contributors been more fully carried out."

| | Men. | Women. | Total. |
|---|---|---|---|
| Patients at the commencement of the year | | | 59 |
| Admitted in course of the year | 24 | 11 | 35 |
| Whole number | | | 94 |
| Discharged, including deaths | | | 28 |
| Remaining, March 1, 1856 | | | 66 |
| Of the patients discharged, there were cured | | | 14 |
| Died | | | 4 |

The following truly remarkable statement is made respecting the patients deceased: "One man and three women have died during the year. The first was in his eightieth year, and died from the effects of old age; one of the women was seventy-nine years of age, and died of paralysis; the second was seventy-seven years old, and died of exhaustion from long-continued excitement; the third was in her ninetieth year, was deaf, dumb, and idiotic, and died of an attack of diarrhœa."

It is to be hoped that the time is not far distant at which the superintendents of all the hospitals for the insane may be enabled, like Dr. Worthington, to write as follows:—

"It is gratifying to observe the improvement that has taken place within the last few years, both in regard to placing the insane under medical treatment at an early period of the disease, and also in allowing them to remain a sufficient length of time to afford them a fair opportunity to derive all the benefit the institution is capable of conferring. It is but seldom we have to lament the premature removal of a patient, except when the pecuniary circumstances of the individual forbid his longer continuance."

The results of this year "correspond with the experience of previous years, in showing that about one half of those who recover are discharged within three months from the time of admission; that the term of six months nearly represents the average duration of successful treatment, and that a considerable number recover after having been under treatment for as long a time as twelve months. It may be mentioned as an inducement for persevering in the use of remedies, that the recoveries which take place gradually, and occupy the longest time, are often the most satisfactory and permanent."

In regard to mechanical restraint, it is remarked that "'the sleeves,' (camisole?) made of soft material, is the only form in which it is used among our patients, and, during the last six months, no case has occurred in which it was deemed necessary, or was resorted to."

In an asylum like that the report from which is before us, where all the recipients of its benefits are "pay patients," it is much more difficult than in State, County, or City institutions, extensively to introduce a system of manual labour, or employment. Especially is this true in respect to the occupants of the department for females. From the subjoined extract we infer that this difficulty has been, measurably at least, overcome at the Friends' Asylum.

"A few of the female patients engage in assisting the attendants in their household duties in the wings; but the greater number occupy themselves in knitting, and the various kinds of needlework. The most of the clothing of the female patients has been made up in the institution, and a large number of garments for the poor, the materials for which were furnished by a friend in the city, have also been made. The advantages of occupation have been particularly observable during the past year among the excited class of female patients, some of whom, by persevering exertions on the part of the matron and attendants, have been induced to engage in it."

It is universally acknowledged that of all the elements constituting what is called the "moral treatment" of the insane, manual employment which contributes to some useful or beneficent object or end, is the most beneficial. Hence its extensive application is of paramount importance. We have found, by experience, that much may be effected towards the object of inducing all the patients of adequate physical ability to engage in it, by giving currency to, and constantly sustaining, in the wards, the idea that such employment is expected from every one; that it is a part of the established routine; and that he who refuses thus to occupy a portion of his time, disregards one of the wholesome regulations of the establishment.

Among the additions to the means of entertainment of the patients at this asylum, are two of Lloyd's Stereoscopic Cosmoramas. Within a few months we have seen this convenient apparatus for the exhibition of photographic pictures at several of the hospitals for the insane.

The report for 1856–7, like that of the preceding fiscal year, is ornamented with two fine pictures; one, a front view of the asylum, the other a view of the garden and library.

| | Men. | Women. | Total. |
|---|---|---|---|
| Patients in the asylum, March 1, 1856 | | | 66 |
| Admitted in course of the year | 20 | 16 | 36 |
| Whole number | | | 102 |
| Discharged, including deaths | | | 44 |
| Remaining March 1, 1857 | | | 58 |
| Of the patients discharged, there were cured | | | 21 |
| Died | | | 9 |

We hope that our friend, Dr. Worthington, will introduce into his reports, hereafter, some method by which the whole numbers, of each sex, who have been in the asylum in the course of the year, can be ascertained. Many improvements have been made in the organization, and the internal economy of the institution during his administration: can he not now find time to revise and reform his antiquated form of published statistics?

We quote, nearly entire, the doctor's remarks upon the "forms of insanity."

"In the nomenclature of the disease, I have preferred retaining the generic names of Mania, Monomania, Melancholia, and Dementia, rather than adopting a more minute subdivision which, however it may appear more scientific than the older method, scarcely answers as well all the purposes of classification. If these terms do not express accurately the nature of the disease, they are, as it were, consecrated by long established usage, and have at least the merit of being intelligible. It is difficult sometimes, at first, to decide under which of the above heads a given case shall be classed, from the fact of the changing phases of the disease; a case occasionally in its progress exhibiting the character of two or more of the above forms. Thus a patient affected with monomania, under some real or imaginary provocation, will break out into the excitement and violent acts of mania; the depression of melancholia, though essentially distinct, in some cases bears a close resemblance to the inertia of dementia; some of the demented are subject to paroxysms of maniacal excitement; and even the deep dejection of melancholia alternates, in some instances, with the elevation of self-pleasing monomania. These changes show that the above-named do not indicate so many distinct diseases, but rather varying forms of one and the same disorder. Yet, in most of these cases, there are predominant features which assign the patient to one of the above forms in preference to the rest.

"One reason for the above classification of insanity, is the avoidance of the term 'moral insanity,' which has been so greatly misunderstood and perverted that it would, perhaps, have been better had it never been invented. As generally understood, this term conveys the idea of a condition in which patients, without any impairment of their mental integrity, are so much under the control of some evil propensity as to be utterly powerless to resist it, and consequently irresponsible for any act committed under its influence. There may be cases of insanity in which a disposition to immoral conduct is conspicuous, and in which mental disorder may not be very apparent; yet to say that the indulgence of this disposition is of itself any evidence of the disease called insanity, shows very confused ideas on the subject. The habitual indulgence of bad passions may lead to insanity, but when this condition is reached, it is manifested by other signs of mental impairment than mere inability to resist them. Perverted sentiments and excited passions, though not alone *constituting* insanity, do often, however, enter largely into its manifestation. The proneness of maniacs to irritation and anger, and their disposition to fancy themselves the objects of actual or intended wrong, are among the forms under which self-love manifests its predominance. The delusions of the monomaniac often show the effects of inordinate self-esteem, and anxiety for promotion and honour among men."

We cannot agree with Dr. Worthington in the desire to avoid the term "moral insanity." Unquestionably, there are cases in which perversion of the sentiments is as prominent and distinguishing a characteristic of the disease, as are high excitement, vociferation, violent gesticulation, and turbulence, in acute mania. We would, therefore, not only not avoid the term in question, but use it as frequently as convenience may require, if but for the purpose of establishing in the minds of men the fact of the existence of such a disease. This fact has been doubted, disputed, denied, ridiculed; not among the laity alone, but by members of the several professions, and even where it should be doubted least, upon the judicial bench. Let, then, those persons whose professional position best enables, and most requires them to do it, continue their expositions of the disease until it shall be generally recognized.

In the remarks upon "Occupation" in the report before us, it is stated that "experience teaches that three or four hours each day is as much as can generally be required," advantageously, of the patients.

"There are but few cases in which there is not discernible some derangement of one or more of the organs or functions of the body, which must be met by appropriate medical treatment. In most cases, tonic medicines and those calculated to allay nervous irritation, are requisite; while those of an opposite character, as are all depressing remedies, must be carefully avoided. The cases in which bloodletting would be beneficial, are extremely rare; while in a large majority it would be decidedly injurious.

"One of the large rooms on the first floor of the centre building has been fitted up with seats and cases, and other necessary fixtures of a lecture-room, for the use of the patients. The philosophical apparatus has been removed to this room, thus affording increased facilities for demonstrating some of the familiar principles of natural science."

2. The annual report from the Government Hospital for the Insane, near Washington D. C., is signed by Dr. Benjamin S. Bohrer, President of the Board of Visitors, and Dr. C. H. Nichols, the Superintendent.

| | Men. | Women. | Total. |
|---|---|---|---|
| Patients in the Hospital July 1, 1855 . | 26 | 34 | 60 |
| Admitted in course of the year . . | 36 | 11 | 47 |
| Whole number . . . . . . . | 62 | 45 | 107 |
| Discharged, including deaths, . . . | 8 | 6 | 14 |
| Remaining July 1, 1856 . . . . | 54 | 39 | 93 |
| Of those discharged, there were cured . | 3 | 2 | 5 |
| Died . . . . . . . . . . | 4 | 4 | 8 |

We quote the following extract from the report, because it relates to a subject heretofore unmentioned, so far as we recollect, in any of the American reports.

"Only *five*, or about 8 per cent. of the sixty-three persons admitted before the commencement of the Hospital year to which this report relates, had been insane for a less period than one year at the time of admission; while of the forty-seven admitted this year, *nineteen*, or about 40 per cent. had, as well as could be ascertained, been insane less than one year, and were more or less hopeful in respect to recovery.

"This very satisfactory improvement in the character of the patients received the past year, is likely to continue for two or three years to come, when the proportion of recent cases to the whole number admitted will reach its maximum of about 64 per cent., as is made to appear in a late report of the celebrated Friends' Retreat, near York, England, which now sums up a very carefully recorded experience of sixty years.

"It might at first appear that when a particular institution has been in operation long enough to receive all the protracted cases which had accumulated in the absence of convenient provisions for their accommodation, the subsequent admission from the vicinage would be mostly cases of short duration; but a little reflection will render it apparent that the experience of that ancient establishment, just cited, is perfectly consistent with the probabilities everywhere.

"The thousand refined dissipations of modern civilization give rise to many cases and forms of mental derangement whose existence is at first debatable, and as it has often happened in the past, so it will probably continue often to happen in the future, that the timidity, or affection, or pride, or cupidity, or inability of friends, will defer a resort to hospital treatment till the disease becomes as confirmed as it has long been apparent and troublesome."

Some of the peculiarities of the Government Hospital, and some of the advantages springing therefrom, are thus alluded to:—

"That this establishment will afford a home for life for all its incurables; that they are separated from their friends, and are independent of them, and dependent upon the institution; that the soldier and the sailor are habituated to obedience and order; are all circumstances which, taken together, are calculated to give us a more complete and easy control of the time and habits of our patients than has hitherto been practicable in any American Hospital for the Insane. It is our aim as a permanent policy, to turn these favorable circumstances to account in effecting the gradual engagement of all our incurables who have been accustomed to any form of manual labor, in some wholesome and useful employment.

"Our efforts thus far have been encouraging beyond our most sanguine expectations. No accident has happened, though several patients have been intrusted with tools who had previously been deemed dangerous. Refreshing and sound sleep has taken the place of the most vicious indulgences; pallor and listlessness have given way to ruddiness and strength; and, above all, increased interest in life and its objects and affairs, has added light to the eye and animation to the step. Indeed, we have often been astonished to observe how the industry and good conduct of our patients have kept even pace with the encouragement and confidence they have received at our hands."

3. The Eighteenth Annual Report of the Trustees and Officers of the Central Ohio Lunatic Asylum, at Columbus, is a pamphlet of seventy-six large duodecimo pages; and yet it furnishes but little matter which comes within the usual scope of our notices. The superintendent, Dr. R. Hills (superintendents succeed each other at this institution almost as frequently as the annual reports), occupies a large part of his report by an exposition of the "wants" of the Asylum. We proceed to make some extracts.

"But little can be said of our farming. The principal portion of our farm is but slightly removed from a state of nature, it being in the condition of what is usually termed a woods pasture.

"An abundance of water in such an institution is indispensable. Our arrangements therefor are very imperfect, troublesome, and expensive. Much of the time during the past summer, it has been necessary to economize its use carefully, and a portion of the time it has been necessary to carry it into all parts of the house by hand.

"The barn 'is a wooden structure,' at this time in a state of complete dilapidation, and it is with regret that we are compelled to use it for even another winter.

"Workshops for a variety of mechanical operations are found in most other institutions, got up for the benefit of patients. Ours has none! That at Utica has a printing office. * * * * There are also cabinet shops, turning lathes, tailor and shoemaking shops, &c. Other institutions are similarly provided; but what have we? Absolutely nothing! Not even a shoe-bench.

"As many as ten years since there were over six hundred volumes in the library, and it was then the practice to make yearly appropriations to increase the number. Now, the entire miscellaneous library comprises less than 275 volumes. Those in any manner touching the subject of insanity, number 31 volumes. Those on medical and scientific subjects, 37 volumes. They are old, and most of them have little value.

"There is not a single sofa in the patients' halls; there are three lounges of domestic manufacture, hard and uncomfortable, and six split-bottomed rocking chairs, with one wooden one in the eastern hall, for the comfort and convenience of one hundred and twenty-five females! There is scarcely a log-cabin in Ohio that is not better provided in these respects."

These extracts are sufficient to convince the reader of the decadence of the institution at Columbus, an institution which, during the first twelve years of its existence, sustained its position amongst the best of the kind in the United States. This decadence is acknowledged by Dr. Hills, in the remark, "had the asylum been originally intended for or purposely permitted to degenerate into a mere receptacle for the incurable insane, where the simple physical wants and ordinary necessities of life were to be provided for with even a generous hand, then could I say that those for whose benefit it was created are as well provided for as it is possible for them to be under any circumstances, or in any institution of the country. But it is otherwise. It has a much higher aim.

"The question," he continues, "as to what, where, and when have been the influences that have lost to us our former pre-eminence, it is not proper for me, nor am I disposed, to discuss. I will only say, that without an intelligent, active, and faithful superintendence; a wise, liberal, and harmonious directory; a generous and open-handed legislation; and, with all, and over all, a Divine sanction, we cannot expect success."

Unhappily this institution has been so wholly controlled by partisan politics that, in the course of seven or eight years, it has had a succession of no less than five superintendents, most of them elected in conformity with the modern political dogma, "to the victors belong the spoils." Dr. Hills has given a long detail of the "wants" of the Asylum, and says, "to specify *all* our wants would be too tedious." Among those which are not specified are the first, the greatest, the most important. These are *separation from partisan politics*, and *a comparatively permanent superintendent.* Supply these two primary and radical necessities, and the number of other "wants" would very rapidly decrease.

| | Men. | Women. | Total. |
|---|---|---|---|
| Patients in the Asylum, Nov. 15, 1855 . | 109 | 107 | 216 |
| Admitted to Nov. 1st, 1856 . . . . | 68 | 86 | 154 |
| Whole number . . . . . . . . | 177 | 193 | 370 |
| Discharged, including deaths . . . | 75 | 72 | 147 |
| Remaining, Nov. 1st, 1856 . . . . | 102 | 121 | 223 |
| Of those discharged, there were cured . | 30 | 34 | 64 |
| Died . . . . . . . . . . | 9 | 9 | 18 |

*Causes of Death.*—Phthisis pulmonalis, 3; apoplexy, 3; typhomania, 3; epilepsy, 3; hemorrhage from bowels, 2; dysentery, 1; organic disease of brain, 1; anasarca, 1; anæmia, 1.

Throughout the year the inmates enjoyed "an unusual exemption from epidemics, and even the ordinary diseases of the climate and season."

All statistics prior to the last fiscal year, are omitted from this report.

4. On the 1st of December, 1854, Dr. L. Firestone commenced his duties as superintendent of the Northern Ohio Lunatic Asylum, at Newburg. On the 5th of March, 1855, the first patient was received. On the 5th of August, 1856, Dr. Firestone was subjected to the political guillotine, and his place filled by Dr. R. C. Hopkins.

On the 14th of August, Dr. Jacob Laisey was appointed assistant physician, and Mr. E. H. Doolittle steward.

Judging of the future by the past, the official existence of Dr. Hopkins will be coextensive with the predominance of the party which has borne him into office.

From the 5th of March, 1855, to the 31st of October, 1856—

| | Men. | Women. | Total. |
|---|---|---|---|
| The number of patients admitted was . | 126 | 160 | 286 |
| Discharged, including deaths . . . | 60 | 87 | 147 |
| Remaining Nov. 10, 1856 . . . . | 66 | 73 | 139[1] |
| Of those discharged, there were cured . | 47 | 57 | 104 |
| Died . . . . . . . . . | 4 | 11 | 15 |

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[1] The statistics in the Report, instead of being given in one place, by the superintendent, are partly included in the report of that officer, and partly in that of the trustees. Dr. Hopkins states the number remaining on the 1st of Nov. to be 141.

"During the first two weeks of our occupancy of the house," remarks Dr. Hopkins, "a few cases of dysentery, of a mild form, occurred. Fortunately no deaths occurred from this cause."

"The year just past has shown a steady increase in the number of those seeking relief in the asylum, so that at its close, we find it crowded to the fullest possible capacity. * * * The number of applicants on file (25) which we have been unable to accommodate, gives us no hope of a less average than for the past three months.

From the state of things in Ohio, during the past few years, we infer that the new hospitals were erected upon contracts, the giving of which was in the hands of political partisans. Hence we are not surprised at the subjoined language of the report:—

"*The repairs* upon the buildings and out-buildings have been expensive, and still more expensive ones will be required in the year to come, or parts of the buildings must go to speedy decay. This may appear almost incredible of structures so nearly new. Yet the fact is plainly visible to the most casual visitor. Among those which have been made, or are now in progress, the rebuilding of the gas-well is most prominent. The gas-house can hardly be kept from falling until spring, and it will be necessary to rebuild nearly or quite the whole structure then, if not before."

"The removal of the barn and other out-buildings to a uniform and more convenient locality, promises to add much to the comfort of our stock, and those having them in charge."

"I am satisfied that prudence and economy would dictate the substitution for the present rickety and badly-geared pump, a larger and more simple machine."

"A change of the kitchen and bake-room, from their present smoky, out-of-the-way location, directly over the boilers, to a more central and convenient one, is desirable—I might say absolutely indispensable. The fixtures of these apartments will need to be nearly all replaced, somewhere in the approaching spring."

All this is exceedingly encouraging information in regard to an establishment which had been in operation but one year and eight months, and which was constructed at a time when the knowledge of the best and most convenient architectural arrangement of buildings and apartments for the insane had arrived at a high degree of perfection.

5. Dr. Joshua Clements was the superintendent of the Southern Ohio Lunatic Asylum, at Dayton, from the time of its opening, September 1st, 1855, until the 1st of May, 1856, the somewhat protracted period—protracted for Ohio—of eight months. The star of his political opponents having now gained the ascendant, he was "for such a worthy cause" removed, and his place supplied by Dr. J. J. McIlhenny.

| | Men. | Women. | Total. |
|---|---|---|---|
| Patients in the Asylum, Nov. 1, 1855 . | 23 | 23 | 46[1] |
| Admitted in course of the year . . | 87 | 88 | 175 |
| Whole number . . . . . . | 110 | 111 | 221 |
| Discharged, including deaths . . . | 40 | 44 | 84 |
| Remaining, Nov. 1st, 1856 . . . | 69 | 64 | 133[2] |

*Causes of Death.*—"Apoplexy, 1; exhaustion, 2; inanition, 1; hemorrhage of bowels, 1; chronic dysentery, 1; *apnœa*, 1; chronic gastritis, 1; disease of heart, 1; tabes mesenterica, 1.

The Italics of "*apnœa*" are ours. Some light is probably thrown upon this case by the following statements, on a subsequent page of the report: "One of our number committed suicide, by hanging himself to the window in his room, with a strip torn from a sheet on his bed. He was early discovered, but too late for resuscitation."

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[1] According to the report of the preceding year, 48.

[2] This line is given as in the report, although from the figures above it, it should be 70—67—137.

"In the months of May and June, erysipelas seized upon a number of our patients, in quite a severe form, and at one time, threatened to seriously invade the whole house; but, by strict attention to cleanliness and regimen, it ceased its violence, assumed a sporadic character throughout July and August, and finally disappeared from the house, without producing any deaths, or any very deleterious results."

Our business with the reports of the public institutions for the insane, relates more to the matter which those reports contain, than to the manner in which that matter is conveyed. Yet, when we meet with language like that of the following extracts, we cannot help wishing that a little more care had been taken.

"There have been three elopements the past year."

"The relation of mind and body are so intimately and intricately blended that neither can suffer injury without the other. The sympathetic relation existing between the complex machinery of our systems is so mysterious in its workings, that, to fully understand and comprehend the influences which, in this way, may be exerted upon the mind, involves facts which have been, perhaps, too little studied, even by medical men.

"The idea that it was rather disgraceful to send a near and dear relative to an insane asylum has now, happily, but few advocates. But, on the contrary, at the very first onset of dethroned reason, many persons now are not only willing, but solicitously anxious to have them cared for in a place of this kind.

"Such a state of public sentiment needs not only encouragement, but a care to instil it into the minds of the community."

Dayton, like Newburg, furnishes some of the beauties of buildings of which politics is the foster-mother.

"It is impossible," say the trustees, "to wash the floors without endangering the plastering below. They were made, as the large cracks indicate, of unseasoned or wet material."

"The cooking ranges were worthless. Their place has been supplied by a cooking stove."

"Last winter it was found impossible to warm comfortably the four wards then in use, though one hundred bushels of coal and five cords of wood were daily consumed. We have been obliged to have the boilers reset, and new castings provided for their fronts. * * * Attempts have been made to remedy other important defects in the heating apparatus."

"The water-closets are defective; health and comfort require their remodelling.

"The pumps and pipes now in use for elevating the water to the tanks in the attic, are too small to furnish the necessary supply. New ones have been ordered."

"The roof on many parts of the building leaked badly. After several ineffectual attempts to remedy it without, we deemed it necessary to put an entire covering of tin on the dome, and have contracted for the work."

"Owing to the leaking of the roof and floors, much of the plastering has fallen, and must be replaced."

"There is a great defect in the system of ventilation for the whole house, and particularly the wards. A small sum expended for the purpose might effect a great improvement, though it is now impossible to render it as perfect as it might, and ought to have been made in the construction of the building."

"From the basement to the cupola the locks were of a bad quality. The most worthless have been removed, and better ones substituted."

We have now completed the task—a most disagreeable one, it is true—of presenting to our readers some of the defects of the three State Institutions of Ohio, as they are represented by their trustees and executive officers. Those institutions stand as the monuments of a most deleterious policy—a policy which blasts every philanthropic establishment into the management of which it is introduced—a policy which we shall continue to denounce, wherever and whenever, and by what political party soever it may be adopted. We saw the New York City Lunatic Asylum when it was under the political *régime*, and we have seen it years after its emancipation therefrom. It presented, at the two different times, a most remarkable contrast. The popular ideas of the two opposite states in the future world are scarcely more dissimilar. The New York Institution is regenerated; and the institutions of Ohio are in the path which, if long pursued, will reduce them to its former condition. Such a result is inevitable.

The superintendents of the institutions in Ohio will observe that we are writing against a principle of action which, although it may have brought them into office, does not necessarily in the least affect their qualifications for those offices.[1] They may be, for aught we know, better adapted to the peculiar positions which they occupy than any other persons in Ohio. Personally, we have no acquaintance with either of them, yet we hope that, if they be properly qualified for their places, they may retain those places until the institutions under their care shall rank among the best in the country. Dr. Hopkins has had considerable experience in the business as Assistant Physician at the Central Ohio Asylum; and the elaborate report of Dr. Hills very clearly demonstrates that he understands the necessities of an establishment for the insane.

The buildings of the two new hospitals in Ohio are not the only ones of the kind, in this country, which were shabbily constructed. All such edifices, if built by contract, are very likely to be defective in the extreme. The building of the Pennsylvania State Hospital for the Insane, although but six or seven years of age, is already feeble, decrepid, rickety, superannuated, and will soon be unable to sustain its own weight without additional assistance. A structure of the kind ought to be intended for the wear and tear of centuries.

Unseasoned lumber has been used in many of the recently erected hospitals. Hence, in many places where joints should be perfectly tight, there is sufficient space to admit the finger. There are base-boards with an opening of from one-half to three-quarters of an inch between them and the floor, and doors with the panels shrunk so far out of the frame that you may thrust your hand between them. Much has been said and much has been written upon the subject of ventilation. This is well; and every properly constructed hospital should be supplied with some means for changing the air, which formerly was not taken into consideration by the architects. But if the buildings are to be like some to which we have alluded, all this extra labour and expense is unnecessary. The greatest difficulty will be to prevent the air from being changed too rapidly.

P. E.

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[1] Since the above was written, we have been informed that in the appointment of Dr. Hopkins to the superintendency of the Asylum at Newburg, political party considerations were waived. He obtained his office simply for the reason that he was qualified for the performance of its duties. How strangely soever it may appear to the citizens of Ohio, that a man should succeed, by so novel a process, in getting into a place of responsibility and profit, we trust that the result will be such as to induce those who have the distribution of offices in the benevolent institutions, to persevere in their commenced course of well-doing.

Art. XIX.—*American Surgical Tracts.*

1. *Remarks upon Fractures of the Scapula, with Cases presenting Striking Peculiarities. Read before the Medical Society of the State of Georgia, at their Annual Meeting in Augusta,* 1857. By L. A. Dugas, M. D., Professor of Surgery in the Medical College of Georgia. 8vo. pp. 22.
2. *Early History of the Operation of Ligature of the Primitive Carotid Artery, with a Report of Forty-eight Unpublished Cases, and a Summary of Forty-four Cases, with Remarks by Valentine Mott, M. D.* By James R. Wood, M. D., Surgeon to Bellevue Hospital, President of the N. Y. Path. Society, etc. etc. (Reprinted from the *N. Y. Journ. of Med.* for July, 1857.) 8 vo. pp. 59.
3. *An Inaugural Thesis on Intra-Capsular Fractures of the Cervix Femoris.* By John G. Johnson, of the State of Massachusetts. (Reprinted from the *New York Journal of Medicine* for May, 1857.) 8vo. pp. 32.
4. *Surgical Cases, communicated to the Boston Society for Medical Improvement, Oct.* 27, 1856. By George H. Gay, M. D., one of the Surgeons of the Massachusetts General Hospital. (Republished from the *Boston Med. and Surg. Journal*, November, 1856.) 8vo. pp. 24.
5. *Report of an Operation for Removing a Foreign Body from beneath the Heart.* By E. S. Cooper, A. M., M. D. (Published by the San Francisco Medico-Chirurgical Association as an additional paper to its *Transactions* for the year 1857.) San Francisco, 1857. 8vo. pp. 8.

1. The object of the paper of Professor Dugas, as stated by the author, is "to take a hasty view of the injuries to which the scapula may be subjected, to direct special attention to fractures of the neck of this bone, and to relate two cases presenting important peculiarities hitherto unnoticed by systematic writers."

Fractures of the scapula are rare, and those implicating the neck of the bone really demand the special attention of surgeons, for there are many obscure points connected with them to be elucidated. The rarity of fractures of this bone may be inferred from the statistics of Middlesex Hospital and of Hôtel Dieu, which are cited by Professor Dugas. In the latter, in 2,358 cases of fracture, there were but 4 of the scapula; in the former, out of 1,901, there were 18. The proportion of the Middlesex Hospital is slightly greater than that we have found to exist in the Pennsylvania Hospital. In the Fracture Book of this Institution, from December 6, 1852, to October 20, 1857, 1,578 cases of fracture are recorded, and of these 14 are of the scapula. In the Middlesex Hospital, 8 of the fractures implicated the body, 8 the acromion apophysis, and 2 the neck of the bone. In the Pennsylvania Hospital they are thus marked: 4 of the acromion; 2 of the dorsum; 4, just below the spine; 1, of the spine about the middle; 1, through the spine and the upper and lower fossæ; 1, of the inner and upper angle; and 1, of the neck. The fracture of the neck was in a child two and a half years old, who fell from a table; the direction of the fracture is marked as uncertain. In all these cases, with the exception of one in which the dorsum was pierced through, and the inferior angle broken off by a load of shot that passed in the axilla, some under, some over the scapula, the injury was the result of a violent fall upon the shoulder or back, or the receipt of a violent blow upon those parts.

Professor Dugas studies these fractures separately as they occur in the body of the bone, its spine, its processes, or its neck. For those of the body, the spine, and the processes, we find the same directions as to diagnosis and treatment as those usually given by authors. It appears certain that the details given with so much precision in books of the various displacements, are deduced from theoretical views rather than from direct observation. According as the fracture of the bone is higher or lower, the serratus magnus, the teres major, and the latissimus dorsi would be supposed to influence more or less the position of the fragments. This is not so, however. In the *Fracture Book* spoken of, we find, as a general rule, that there was little or no displacement; the only instance of marked displacement is in the case of fracture of the inner and upper angle, which was caused by a fall of fifteen feet on the back; and where the fragment was pulled upwards and inwards by the levator anguli scapulæ. Of course under such circumstances, of all contentive apparatus, the best will be that which causes the least annoyance; and almost always a simple scarf, covering the elbow, the arm, and the forearm, is enough, a bandage being applied in addition for the purpose of holding those parts against the body.

All solutions of continuity of bones in the vicinity of joints, as has been justly remarked by Dupuytren, give rise to numerous errors of diagnosis; and the observation applies with peculiar force to the injuries which occur in the immediate neighbourhood of the scapulo-humeral articulation. Every experienced surgeon can recall to his recollection cases of injuries of the shoulder, in which he felt the greatest difficulty in determining the exact nature of the accident. The subject, therefore, of fracture of the neck of the scapula, the lesion to which Professor Dugas wishes to direct special attention, and to which he has devoted the greater part of his paper, is one of great interest.

Sir Astley Cooper, in his work on Fractures and Dislocations, in the chapter (the xiith) "on fractures near the shoulder joint, liable to be mistaken for dislocations," treats of fracture of the acromion, and fracture of the neck of the scapula, by which he declares that he means fracture through the narrow part of the bone, immediately opposite the notch of the superior costa. Of this latter accident he gives three cases, and he states its diagnostic marks to be three: first, the facility with which the parts are replaced; secondly, the immediate fall of the head of the bone in the axilla, when the extension is removed; and thirdly, the crepitus which is felt at the extremity of the coracoid process of the scapula, when the arm is rotated. The best mode of discovering the crepitus is stated to be, for the surgeon's hand to be placed over the top of the shoulder, and the point of the forefinger to be rested on the coracoid process; the arm being then rotated, the crepitus is directly perceived, because the coracoid process being attached to the glenoid cavity, and being broken off with it, although itself uninjured, the crepitus is communicated through the medium of that process. In the second of these cases, one in which he was consulted by Mr. Alderman Partridge, it was the opinion of that surgeon that the fall of the shoulder was owing to a considerable portion of the glenoid cavity being broken off.

The doctrine professed by Sir Astley Cooper concerning the differential diagnosis of fracture of the neck of the scapula is discussed by Malgaigne (*Traité des Fractures et des Luxations*) under the head of Fractures of the Glenoid Cavity, in the section upon complex luxations of the scapulo-humeral articulation, and it is doubtless from the fact that Malgaigne has placed what he has to say of this accident in this position that Professor Dugas has overlooked it, since he states it as "somewhat remarkable that Malgaigne, in his elaborate work upon Fractures, makes no allusion whatever to fractures of the neck of the scapula, either anatomical or surgical." Malgaigne declares that it is very hard for him to believe that the glenoid cavity can fall so easily into the axilla, the coracoid process being suspended to the clavicle and to the acromion by ligaments of such great solidity; and if it did, an infinitely more certain sign would be had in the movements of elevation and depression alternatively communicated to the coracoid apophysis, without omitting the projection in the axilla of the angular, sharp, or at least irregular inferior fragment, and which would be distinguished readily from the head of the humerus. "As to the very insufficient signs of Sir A. Cooper," he continues, "they appear to me to correspond better with luxation downwards with fracture of the glenoid cavity, than with any other lesion." The only case of fracture of the neck of the scapula, which Malgaigne seems willing to accept as such, is the one reported by Duverney, and cited in the first volume of his treatise, at page 511. A young girl, twenty years of age, fell into a quarry, where she was found dead; the autopsy showed a fracture which separated from the rest of the bone, the neck of the bone and the coracoid process, which is fracture of the neck, as Cooper understands it. We regret that Professor Dugas is not better acquainted with Malgaigne's work, both on account of the question as to the exact situation of the fracture in these injuries, and also of the important peculiarities presented by the two cases he has reported, which he believes hitherto unnoticed by systematic authors.

After citing the opinions of a number of celebrated surgeons, Professor Dugas says:—

"While it is very evident from these quotations that some practitioners not only believe in the *possibility* of a fracture of the anatomical neck of the scapula, but also think that they have *seen* cases of this accident, their language is not such as to remove all doubt as to their true meaning in those cases in which they refer to actual specimens examined after death. J. L. Petit thinks he treated a case of fracture near the glenoid cavity—but he made no post-mortem inspection, and may, therefore, have been mistaken. John Bell's language is too ambiguous to authorize us to conclude positively that his specimen was one of this kind. Samuel Cooper, Chelius, Vidal, and Furgusson, have neither of them referred to any specimen, but simply believe that this fracture has occurred. I do not recollect ever seeing a specimen of this kind, and know of no author who unequivocally describes any. We may, therefore, reasonably infer that if it does ever take place, it must be exceedingly rare."

The authorities cited by Prof. Dugas speak most positively as to the existence of the fracture of the glenoid cavity, and we are at a loss to discover any ambiguity in the language of Bell: "I have met with the accident in practice, and have preparations of the fractured bone, so that there can be no doubt of this accident sometimes occurring, yet it is very rare." Malgaigne describes four cases, and, of course, unequivocally: one by J. Gregory Smith, taken from the *London Medical Gazette*, 1834, vol. xiv. p. 280, where there was a fracture of a small portion of the external edge of the glenoid cavity, discovered at the post-mortem dissection; another case which he saw himself in a man who died four days after the reduction of an intra-coracoid luxation, in the wards of M. Dononvilliers, where the internal edge had been broken off. A third case is represented in his XIXth plate, fig. 3, where a fracture of the internal edge accompanied an incomplete sub-coracoid luxation; the patient died four days after the accident, and the reduction of the dislocation. In all these cases the limb remained in place after the reduction, on account of the small extent of the fragment detached. In a fourth case, one of incomplete sub-coracoid luxation, represented in plate xxii, fig. 4, the fracture must be considered the principal lesion, for it has detached the whole anterior third of the glenoid cavity. In such a case as this a special apparatus would be required to maintain the reduced bone in its position, and we would have the three symptoms given by Sir Astley Cooper, as diagnostic of fracture of the surgical neck.

The acromio-coracoid ligament goes from the summit of the acromion to the posterior edge of the coracoid apophysis; the trapezoid, or anterior coraco-clavicular ligament, and the conoid or posterior coraco-clavicular ligament fasten it to the clavicle; we do not understand, therefore, how the arm would fall considerably, from fracture of the surgical neck of the scapula, *unless* the acromion process and the clavicle were fractured at the same time. In the second case, reported by Prof. Dugas, he mentions distinctly that *the coracoid process evidently followed the upward and downward movement of the humerus*, and here the clavicle was broken two and a half inches from its acromial extremity, and the acromion process at its junction with the spine of the scapula. We are fully satisfied that all cases, in which the clavicle and spine of the scapula were both uninjured, reported as fracture of the neck of the scapula, from the immediate return of the deformity of the shoulder, when the force which had reduced it was dispensed with, should not be considered as fractures of the surgical neck, but as fractures of the glenoid cavity; all cases, in which the deformity from the displacement of the head of the humerus is at all considerable.

Surgeons are seldom sufficiently precise in their statements of the symptoms remarked in cases of fracture and of luxation. Even so correct and careful a surgeon as Dr. Norris, in the history of a fracture of the neck of the scapula, given in a report of the surgical cases treated in the Pennsylvania Hospital, printed in the xxiiid vol. of this *Journal* (for 1838) does not mention the coracoid process at all. He says: "The clavicle and spine of the scapula were uninjured; the shoulder was thrown forward so much as to give at first sight the appearance of a luxation forwards of the head of the humerus, but upon taking hold of the arm the motions of the articulation were found to be perfect, showing that the humerus had not left the glenoid cavity; the humerus too could be traced in its whole extent, and was not fractured; upon rotating the arm or pushing backwards the shoulder, the trunk being firmly supported, crepitus was very evident, and the deformity could be made to disappear, but immediately that the force was dispensed with it returned. From the existence of the above symptoms the injury was judged to be fracture of the neck of the scapula." Now the data here given are not sufficient to make a precise diagnosis. As the clavicle and spine were uninjured we may conjecture, if we are right in what we have said above, from the fact that the deformity was considerable, that the fracture of the scapula did not extend inside of the coracoid process, and that it was left attached to the body of the scapula, but that is as far as we can go. It may be said that in all these cases the treatment must be the same, and that so far as the good of the patient is concerned a precise diagnosis is unimportant. The greater the experience and the more enlightened the judgment, however, the less apt is this assertion to be made. The words of the celebrated secretary of the Royal Academy of Surgery, Louis, prefixed by Smith to his valuable memoir on the diagnosis and pathology of fractures of the neck of the femur, cannot be held too much in remembrance: we thus translate: "Among all the parts of the art of surgery the science of diagnosis holds the first rank, and it is the most useful, and the most difficult of them all; without an exact and precise diagnosis, theory is almost always faulty, and practice often incorrect."

The important peculiarities related by Prof. Dugas, as existing in the two cases he records, and which he is not aware to have ever been mentioned by any author in connection with this accident, are lesions of the axillary artery and nerves, producing an absence of pulsation in the arteries of the limb, and paralysis of its muscles. These lesions, it is true, are exceedingly rare, particularly that of the rupture of the axillary artery, but it is wrong to suppose that they have never been noticed. Nélaton (*Path. Chirurg.*, tom. ii. p. 368) records a case which occurred in his own practice, where in a luxation under the glenoid cavity, the two internal tunics were torn to a very limited extent; a false consecutive aneurism rapidly developed itself, and three months later he was forced to have recourse to ligature of the subclavian, which he performed above the clavicle; the disease had already made such alarming progress, that the aneurismal sac, in spite of the ligature, opened and destroyed the patient. Malgaigne (tom. ii. p. 197) gives a case observed by Prof. A. Bérard, of subcoracoid luxation, where there was no pulse after the accident; the vessels remained obliterated, gangrene invaded several of the fingers, and the patient died. At the post-mortem examination, the two internal tunics of the axillary artery were found torn in their whole circumference, and the cellular tunic was lengthened as a glass tube softened by heat and drawn out.

Sudden paralysis, after dislocation of the shoulder, is more frequent than the absence of arterial pulsation; indeed, it has been described so often that we are surprised at Professor Dugas's assertion that it has never been noticed by surgeons. It can be said to have always excited their attention. The muscle usually paralyzed is the deltoid, which, as is well known; is supplied by the circumflex nerve; hence, this nerve was supposed to be lacerated by the accident forcing the head of the humerus from the scapula. But at times the paralysis is much more extensive, and affects all the muscles of the arm, as in the cases reported by Professor Dugas. We have seen a case ourselves, and which we have reported elsewhere, in which the biceps, the brachialis anticus, the coraco-brachialis, the supra-spinatus, the infra-spinatus, the serratus magnus, and the supinator longus, were all paralyzed. In this patient, the paralysis followed immediately a fall upon the shoulder, and *there was no luxation of the head of the humerus.* Compression of the brachial plexus by the luxated head is usually assigned as the cause of this affection, but such compression has never been determined in autopsies; and, so far as sub-coracoid and intra-coracoid luxations are concerned, it may be considered as impossible. Again, in some cases, as in the one we just mentioned, the paralysis has followed a fall upon the shoulder, without the head of the bone having left the glenoid cavity. Could not the brachial plexus be contused by something else than the head of the humerus? It can very readily happen, as Nélaton first assured himself by experiments upon the dead body, by a force pushing the clavicle against the first rib, as in a fall upon the shoulder, by which the clavicle is carried inwards and backwards. And, what it is important to notice, the axillary or circumflex nerve is found at the points the most exposed to pressure. By making a dissection of the parts, or even by glancing at a well executed plate, any one can easily satisfy himself of this. This is a very interesting subject, and one well worthy of study; we have, however, already exhausted all the time at our disposal for the examination of Professor Dugas's paper.

2. According to the examination of the history of the operation of ligature of the primitive carotid, made by Dr. Wood, it appears, though it certainly was performed before, that the first operation in which the date is fixed with exactness, and the history of the case given with accuracy, is one in which it was tied for hemorrhage, following an attempt at suicide, on board a British vessel of war, the Tonnant, on the 9th of October, 1803, by Dr. Coley. Eighteen days afterwards, it was tied by Dr. Cogswell, of Hartford, Ct., in the removal of a tumour of the neck. These cases were not reported, however, for years afterwards; the first appeared for the first time in the *Med.-Chir. Journal* for January, 1807, the other in the *New England Journ. of Med. and Surg.* for October, 1824. The celebrated operation of Cooper was performed on the first of November, 1805; and it is very properly the first paper printed in the *Medico-Chirurgical Transactions.* It may be judged, therefore, from the recentness of these dates, that there are many points connected with this operation not yet decided, and Dr. Wood has done well to place on record his experience in this operation, and to add to it all the other unpublished cases of the city of New York, in order that they may be examined by those interested in the matter.

The following is the summary prepared by Dr. Wood himself, which includes, of course, only the reported cases:—

"The common carotid was ligatured for the following causes:—

*Hemorrhage.*—Whole number, nine; of which six recovered, and three died.

*Cause of Death.*—Two became hemiplegic; one, a few hours after the operation, dying comatose, no autopsy; the other, on the second day, also dying comatose, and revealing, on *post-mortem* examination, softening of the brain and inflammation of the pleura. One died on the eleventh day, and, on examination, was found to have had pericarditis, with collections of pus in apex of lung, and liver.

*Malignant Disease of Head or Face.*—Whole number, seventeen; of which four resulted in the apparent cause of the original disease; ten were decidedly benefited, growth of the tumour being for a time arrested; two died; one not noted.

*Cause of Death.*—In one, hemiplegia supervened twenty-four hours after operation, and death occurred in sixty hours; autopsy revealed extensive softening of the brain; in the second case, death occurred three or four days after the operation, from exhaustion.

*Aneurism by Anastomosis.*—Whole number, ten; of which four were cured; one died; five were benefited.

*Cause of Death.*—In the one fatal case, phlebitis was found to have existed, pus found in cavity of deep jugular vein.

*Aneurism of Branches of Carotid.*—Whole number, four; all recovered.

*Epilepsy.*—Whole number, two; both benefited but not cured.

*Removal of Tumour.*—Whole number, seven; all recovered.

*Secondary Hemorrhage* occurred in five instances, slightly in two, and severely in three; all recovered, the hemorrhage being controlled by pressure.

*Date of Separation of Ligature* was noted in twenty-four cases; maximum period, thirty-one days; minimum, nine days: average, fourteen days and twenty-one twenty-fourths."

Of these forty-eight cases, as is seen, six were fatal; and of these six, three, or one-half of the whole number, were fatal from the direct action of the ligature upon the nutrition of the brain. Out of nine cases operated upon for hemorrhage two died from this cause, and out of seventeen operated upon for malignant disease of the face or head, one. According to the important statistics of Dr. Norris, published in the XIVth vol. of this journal (1847), serious symptoms of cerebral disorder showed themselves 12 times in 38 ligatures of the primitive carotid practised for aneurism, or in about 32 per cent.; in traumatic hemorrhage, 8 times in 30, or less than 27 per cent.; and in erectile tumours 8 times in 42, or 19 per cent. These proportions do not agree with those found to exist in the cases given by Dr. Wood in different affections. This goes to support what Broca says (*Des Anévrysmes*, Paris, 1856, page 505), that neither the disease for which the ligature is practised, nor the age, sex, or constitution of the patient, in a word, none of the conditions which the surgeon can detect or foresee, explain the occurrence of these cerebral symptoms, which seem to depend chiefly upon the state of the anastomoses, peculiar to the individual.

Cooper's first operation was followed by paralysis of the leg and arm of the opposite side, of which the patient had nearly recovered when she died of inflammation of the sac and the surrounding parts. The first fears excited by this were soon dissipated, but from one excess surgeons went to another, and many authors said that the ligature of one primitive carotid could never seriously compromise the cerebral functions. It is now, however, an unquestionable fact, that it not only can, but does; in Dr. Wood's cases, as was noticed, one-half of the deaths had this for their cause. If the disease, therefore, be one of the exterior arteries of the head, or one of parts supplied by them with blood, it seems to us that the external instead of the primitive carotid should be tied. The operation itself would be one of greater difficulty, but that should not be taken into the account. There is reason to fear the influence of the neighbouring branches, all of them large, given off by this artery, so soon after the bifurcation of the carotid, and this is the only legitimate objection we can think of to the operation. Broca, in the work above cited, says, that he has seen the external carotid tied with success in a case of traumatic aneurism of the parotid region. The operator was Mr. Adolph Richard.

In the *remarks* communicated by Dr. Valentine Mott, the most remarkable point is, that he has ligated the common carotid artery forty-four times.

3. The Thesis of Dr. Johnson was submitted to the public examination of the Trustees and Faculty of Medicine of the College of Physicians and Surgeons of the University of the State of New York, for the Degree of Doctor in Medicine. The question, whether or no intra-capsular fractures of the neck of the femur unite by bone is herein discussed, and the negative conclusion is arrived at. The author thus sums up his argument: "1. It is absolutely impossible to form a certain and unmistakable diagnosis of all these fractures during the life of the patient. 2. That the probabilities are all against union by bone, from lack of nourishment to the fractured part of the head, from impossibility of perfect rest, and from synovitis. 3. The argument from the analogy of fractures of the patella, olecranon, etc., is an argument against, instead of for osseous union. 4. Cases where every circumstance was favourable to union, if any fractures of this kind could unite, yet which failed to unite. 5. The cases given to prove this union not having proved it."

Many bitter controversies would never have occurred in the world, if it had been rightly borne in mind that opinions may be discussed but not facts; facts are determined. There are thousands of arguments of the most plausible character in favour of the opinion that oxygen and hydrogen do not form water; but this does not invalidate the fact in the least. The fact is determined, and there is an end of the controversy. Supposing that the first four heads of the above summing up were proven, which we are by no means willing to grant, it would only result that the opinion was one to be discussed, that bony union in these cases was improbable. As to the 5th heading, that the cases given to prove this union have not proved it; it gives evidence of far more credulity to believe that all those who bear testimony to the fact of osseous consolidation have been deceived, than to believe it true, were it a thousand times more improbable than it is.

The essential cause of a frequent failure in bony consolidation, in intracapsular fractures of the neck of the femur, is owing to a want of proper coaptation, due chiefly to the extreme mobility of the superior fragment. But the most important of all causes preventing it must be imputed, we believe, less to the fracture itself than to the apparatus employed. Sir Astley Cooper, convinced that it was impossible in this variety of fracture, after a few days of rest, permitted his patients to get up and walk with crutches; is it surprising that consolidation did not occur, and that the synovial membrane became inflamed?

We have seen ourselves a case of bony union in an old patient who died of cancer, and where no apparatus had been applied. The case is reported elsewhere, but we will give it here.

An old woman died in the wards of M. Nélaton, in November, 1853, with ascites from cancer of the liver. She had entered five months before, after a fall upon the hip, with signs of a fracture of the neck of the femur, and a fracture within the capsule. No apparatus whatever had been applied to the limb. At the post-mortem examination, bony union was found to exist between the fragments. There was a difference in length in the two thigh-bones of two-fifths of an inch; the fractured bone being shortened. The fracture was intra-capsular, completely so in all its extent; it followed the edge of the *calotte articulaire.* The displacement was this: the body of the femur had undergone rotation, the anterior and internal portion had been carried forwards; posteriorly, the neck was driven into the head of the bone, while anteriorly, the fragments were separated. The specimen was afterwards divided by a saw, so that a true bony union between the fragments was made most evident. M. Nélaton will answer for the truth of this. We see from this case that when the fragments are held in contact by nature, they unite under very unfavorable circumstances; and we should, therefore, be encouraged to attempt by art to do the same.

The article by Professor Mussey, on *Fractures of the Neck of the Thigh-bone,* published in the April number (1857), of this journal, contains testimony so strong in favour of the osseous consolidation of such fractures, when intra-capsular, that it is impossible to question it reasonably.

It seems to us that the question of the bony consolidation of intra-capsular fractures of the femur is entirely settled by the facts brought forward; it is one of the veracity of the authors who have published examples of it. As Smith says in his memoir on this subject, "If we believe these authors to have been competent judges, that they have had opportunities of acquiring correct information, and that they have not been superficial observers, we must either believe their statements, or expose ourselves to the charge of scepticism, and render it obvious that our judgment has been so warped by theory and preconceived ideas, that no amount of evidence would be sufficient to alter our opinions." P. 56. There was a time in science when the weight of authority sometimes prevented the acceptation of facts, now very often facts will not be received, no matter upon what authority. It is remarkable at the present time, how many young men there are in this country and abroad, who work at the great storehouses of knowledge as if they were Augean stables to be cleaned, and theirs was the Herculean arm to accomplish the labour.

4. The Surgical cases of Dr. Gay, in themselves very interesting, are related in so able and so satisfactory a manner that it is really delightful to read them. Three well executed plates, each containing two figures, accompany the text, and assist in enabling the reader to thoroughly understand the state of the parts affected in the first two cases, which are perhaps those of the greatest interest.

The cases are four in number. The first is one of large fatty tumour of the left thigh, the weight of the tumour after removal being within a fraction of six pounds. The diagnosis of the affection is particularly dwelt upon, as it is in all the cases. The second is one of cystic tumour of the forearm, which was operated upon as fibro-plastic, but found to be a cyst, with thick, tough walls, adherent to the surrounding tissues, and containing in its cavity a free detached scale-like piece of bone. The third is one of encephaloid disease of the thigh, in which a correct diagnosis was almost, if not quite, impossible. The fourth, one of venous erectile tumour of the forearm, in which the diagnosis, here and abroad, had always been lipoma.

The reading of the histories of these four cases is a source of both pleasure and of profit to one fond of surgery.

5. The extraordinary operation performed by Dr. Cooper, was reported to the San Francisco County Medico-Chirurgical Association, and published, by the authority of the association, by a committee appointed for that purpose. It is extraordinary even for California, that land of enormities of every description.

A young man, 25 years of age, named B. T. Beal, by the premature bursting of an old gun, was wounded by a slug of iron, which had been driven into one end, as a temporary breech-pin. It entered the left side, fracturing the sixth rib, and remained in the chest until it was extracted 74 days afterwards. The patient at that time was in a state of extreme prostration; purulent matter was discharging through the opening made by the slug; the left lung had lost its function, and the symptoms of suffocation were most alarming. It was in this condition that he was first seen by Dr. Cooper, and the operation was performed without any delay.

A T-shaped incision was made in the situation of the original wound, the soft parts were reflected so as to expose the ribs, and an effort was made, by using a probe to find the breech-pin. Not succeeding, portions of the 5th, 6th, and 7th ribs were removed, so as to make ample room to afford every facility for the further prosecution of the search; in doing this a discharge occurred of about ten ounces of a fluid resembling venous blood, contained in a cyst connected with a portion of the sixth rib, which was carious; this was followed, soon afterwards, on breaking up some attachments with the finger, by another discharge of at least two quarts of purulent matter. The pleura was very much thickened, and contained several large holes through which the pulsations of the heart could be distinctly seen. During the whole of this time the patient appeared to be rapidly sinking; brandy was given freely, and after a time chloroform was administered. The thoracic cavity was explored for at least three-quarters of an hour with a sound, before anything like a metallic touch could be recognized, which finally was accomplished by passing the instrument between the descending aorta and the apex of the heart. The pulsations of the heart against the instrument were so strong that it was very difficult to settle the matter definitely, but it was at last evident that the locality of the iron was found. The sound was held against it, until a pair of long lithotomy forceps was thereby conducted to the spot and the breech-pin seized and extracted. The forceps could not follow the sound and be expanded sufficiently to seize the metal without lifting the apex of the heart considerably out of its natural position.

The patient recovered rapidly after the operation, and at the expiration of a few months seems to have been as well as before the accident, although the left breast remained somewhat sunken.

In the remarks made by the operator upon the case, the recovery of the patient is attributed to "his great cheerfulness, good constitution, and to the effects of our unparalleled climate, in which it appears nearly impossible for a patient to die with almost any ordinary degree of injury, provided a reasonable share of attention is afterwards given him." A serious objection to the climate, however, is the frequent occurrence of these terrible injuries, and we fear that it is an objection not likely soon to disappear. W. F. A.

Art. XX.—*A Collection of Remarkable Cases in Surgery.* By Paul F. Eve, M. D., Professor of Surgery in the Medical Department of the University of Nashville. Philadelphia: J. B. Lippincott & Co., 1857. 8vo. pp. 858, including a copious index.

This work is simply a book of curiosities in surgery. As such, it will, in spite of its scientific claims, almost inevitably drift into the company of the numerous "Extraordinary" biographies, "Harrowing Adventures," and other like sensation-stirring popularities.

In these days of exuberant journalizing, when some periodical is within the reach of every respectable practitioner, and when all the rare and horrid cases are printed and reprinted with dreary faithfulness and uniformity, we cannot perceive the advantage of publishing, in an expensive octavo of over eight hundred crowded pages, such an *omnium gatherum* of modern instances and thrice-told tales, however curious in themselves or appropriately strung together.

With all due deference to the merits of the compilation, and of its supplementary matter generally, we are inclined to regard the index, which occupies some thirty-four pages, as the most useful portion of the book. This index needs only the references to the original authorities, given with each case, to be of more actual scientific value than all the rest of the work; since it would then point out to us, in a few alphabetical columns, the sources of a large number of observations which are here to be traced only by searching through the many wearisome pages of small type, upon which they are spread out according to the fancy of the collector.

Dr. E. informs us, in his introduction, that he "has been studious to do injustice to no one;" and yet he "has taken the liberty, occasionally, to abbreviate articles; in some instances to give them a more striking and appropriate title; and now and then to add a few brief comments." Whatever ideas the authors of the various papers, which he has thus dished up after his own fashion, may have of his mode of doing them "no injustice," we feel bound as a reader, and still more as a reviewer, to protest decidedly against all pretensions to scientific value in the reports of cases as he presents them. There are no distinctive marks by which can be recognized either the alterations or the comments and headings above alluded to; and hence we have nothing to prevent us, in quoting or reading Dr. Eve's versions, from misrepresenting or misunderstanding the original reporters. None, therefore, but those who are content to study the cases through the compiler's spectacles will be likely to resort to his pages except to gratify curiosity, or to take comfort in the "one practical lesson," which, as he truly tells us, is suggested, "not to be easily discouraged in desperate surgical cases."

According to the introduction, Dr. E.'s object "has been merely to gather for preservation the valuable material now existing mostly in a perishable form; to collect the important and instructive cases from our journals, &c., and arrange them for future reference." In prosecuting this peculiar enterprise, he has grouped together an array of narratives and commentaries, good, bad and indifferent, which is a marvel in itself; and, along with many that were long since sufficiently embalmed, he has certainly rescued, and brought out to some extent, many notable records which might otherwise have been generally overlooked. The presence of these very cases, in the midst of others of vastly less account, or out of place, in such a book, renders it especially provoking, not only that they should be encumbered with such a mass of other matter, but that we have no guarantee that any one of them is given in its strictly original form.

No cases, we are told, "have been admitted into the collection but such as are strictly authentic; as it has been our aim to reject all of a doubtful character." A very extended and careful examination inclines us to believe that this claim of authenticity is generally well sustained. Some of the stories, however, are too manifestly apocryphal to be accepted under any circumstances; while others are given under authority which would scarcely be admitted as conclusive in a court of law. The first case of Sect. II., for example, although quoted, with preliminary comments, from the *Boston Med. and Surg. Journal* of 1847, has no authority for its accuracy but that of a country newspaper. It is quoted as a remarkably striking demonstration of the "*great elasticity of the skull in a child*," and is in the following words: "A few days since," says the *Amherst Express*, "a son of Mr. Dudly, of Shutesbury, Mass., about five years old, accidentally fell from a cart containing about twelve hundred pounds weight, which passed directly over his head. He received no apparent injury except a slight bruise near the ear made by the wheel." This instance of cranial "elasticity" is so well matched by another, at least as credible, that we venture to reproduce it here, as available for a second edition, without any other voucher than the authority of the *Calaveras* (*Cal.*) *Chronicle.* This paper states "that two 'colored gemmen' in that place, who had quarrelled about 'a lady,' met in mortal combat. After an exchange of shots, the sheriff arrested the parties and carried them to jail, when a pistol bullet was found *flattened out* and lodged in the wool of one of the combatants, who was quite unaware of having been touched." We are willing to allow something for the "wool" in our case, but must nevertheless insist that it is quite as much entitled to the honour of a place in Sect. II. as the adventure of Master Dudly. It is strange that none of the parties concerned in circulating the Amherst story appears to have suspected the possibility of a mistake. The nature of the accident would suggest itself at once to most hospital surgeons as a matter of not unfrequent experience. We can recollect three different similarly marvellous escapes, occurring under our observation within the last five years. In the first case, a child of seven years was *apparently* run over in a paved street by a mail wagon weighing at least a ton; although one of the massive hind wheels was seen by several persons to pass directly across his right thigh, the only perceptible injury resulting was a transverse fracture of the femur and slight abrasion of the skin, without material contusion of the soft parts, from which he recovered in the usual time. The pavement was a rough one of large cobble stones, and the child, if really run over, was doubtless saved by the bouncing of the wheel from one stone to another. The second case was that of a youth of seventeen years, who, while dragging by the rope of a fire engine, was overturned in a bed of snow; the wheel of the heavy vehicle immediately passed across his left thigh in such a manner as to produce a simple fracture without other injury. The third case was that of a carter who fell into a mud puddle in such a way that his cart, with a load of bricks weighing at least two tons, passed with one of the wheels diagonally across his arm above the elbow-joint. A compound fracture was the result; but, in consequence of the yielding of the bed of mud beneath it at the time, the limb was not so much injured as to require amputation. The means of escape from more serious mischief to the parts apparently exposed to certain destruction were obvious enough in these latter two cases; but the good fortune of the little fellow in the first of the three, however evident, was surely not more explicable than that of the child in Massachusetts.

With regard to the arrangement we may say, in a few words, that there are ten chapters, each of which is divided into sections. Of these sections there are some seventy-three in all. The cases, instead of being numbered in regular order of succession throughout the book, are numbered only in each section; so that it is impossible to ascertain the whole number without a needless cost of time and labour in the computation.

Each chapter is devoted to a particular anatomical region of the body, and the sections to different portions of these regions; the lengths of chapters and sections being intended to indicate "the supposed importance of the respective regions which they represent." Thus we have chapters on the Head, Spinal Column, Face, Neck, Chest, Abdomen, Pelvis, Genito-Urinary Organs, and the Extremities, each with its sections devoted to minor parts; lastly, our compiler is obliged to stow all unarrangeable matter, as usual, in a miscellaneous chapter, which is the longest and most remarkable in the book.

Bulky and full as this surgical scrap-book is, we feel that it has occupied quite as much attention as can be afforded to it in a passing notice. With the best disposition towards its sponsor, and respect for the zeal and talents which have won him ample distinction in other more congenial fields, we trust that his next experiment in authorship will yield him more undivided honours, and that he may then wield the pen as freely as on this occasion he has used the scissors.

It is due to the publisher, and particularly to the local editor, Dr. W. Gobrecht, to say that the book is accurately printed and respectably got up; and that the index is especially meritorious as a characteristic and successful specimen of editorial labour. E. H.

Art. XXI.—*Medical Lexicon—A Dictionary of Medical Science, containing a Concise Explanation of the Various Subjects and Terms of Anatomy, Physiology, Pathology, Hygiene, Therapeutics, Pharmacology, Pharmacy, Surgery, Obstetrics, Medical Jurisprudence, Dentistry, etc.; Notices of Climate, and of Mineral Waters; Formulæ for Officinal, Empirical, and Dietetic Preparations, etc., with French and other Synonymes.* By Robley Dunglison, M. D., LL. D., Professor of the Institutes of Medicine, etc., in the Jefferson Medical College of Philadelphia. Revised and very greatly enlarged. 8vo. pp. 992. Philadelphia, 1857: Blanchard & Lea.

A dictionary, if it but comprise a simple vocabulary of all the various terms that occur in the different branches, direct and collateral, of medical science, with a clear and concise definition of the sense in which they are employed—a mere terminological lexicon—is a work which every medical man will find a valuable appendage to his reading table. Some work of the kind is, in fact, indispensable to student and practitioner, more especially now, when the progress of discovery and of improvement in every department of medicine is such as to require the constant adoption of new terms to express the many and varied additions that are constantly being added to our stock of professional knowledge. If such a lexicon is confessedly a valuable and frequent book of reference alike to the physician and student, how much more so must be a dictionary, in which they are presented with not simply a definition, but a concise explanation of all the subjects and terms in every department of medicine, and in those sciences that are directly or indirectly connected with it, with notices also of climate and of mineral springs, formulæ for officinal, empirical, and dietetic preparations, etc., of everything, in short, upon which they may at any time demand prompt general information, without the delay or trouble of consulting other works. The explanations given being, at the same time, expressed in a clear and definite manner, and in strict accordance with the views and usages of the latest and best authorities. It is precisely such a dictionary—full, copious, and accurate—that is presented to the profession by Dr. Dunglison, in the fifteenth edition of his medical lexicon now before us.

Complete and comprehensive as the work appeared to be in the preceding edition, the untiring industry and research of the author have enabled him to add to the present, six thousand additional subjects and terms. Many of these, he informs us, have been introduced into medical terminology in consequence of the progress of the science, whilst others had escaped the author in the previous editions.

While we cheerfully concede all credit to Dr. Dunglison for the production of a medical dictionary, better adapted for the wants of the profession than any other with which we are acquainted, and of a character which places it far above comparison and competition; some praise we think is due, likewise, to the publishers, who, by their liberality of expenditure in its passage through the press, have enabled the author to arrange all his additions and improvements in their appropriate places in the body of the work, instead of adding them, as an appendix, to the preceding edition; thus saving to those who have occasion to consult the dictionary, the trouble and vexation of a double reference; and this has been done, too, without materially increasing the bulk of the volume, by the employment of a small but very clear type, cast expressly for the work. D. F. C.

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Art. XXII.—*On the Nature and Treatment of Club-foot and Analogous Distortions, involving the Tibio-tarsal Articulation.* By Bernard E. Brodhurst, Assistant Surgeon to the Royal Orthopædic Hospital, etc. etc. London: Churchill, 1856. 8vo. pp. 134.

The introduction to the volume now before us is occupied with an historical retrospect of orthopædic surgery; and we are presented by Mr. Brodhurst with an accurate account, for the first time in an English dress, of the earlier operations practised for the relief of club-foot. That club-foot and its analogous affections had been studied by the ancient physicians, is sufficiently proven by a perusal of the chapters in which Hippocrates has discussed the subject; in fact, the treatment by mechanical apparatus which he lays down, will answer sufficiently well, even at this day, for the cure of the simpler forms of varus. Subsequent to the time of Hippocrates, for a period of 2000 years, little improvement was made in the treatment of this deformity, although we find frequent allusion to the complaint in the works of Paré, Severinus, and Fabricius-ab-Aquapendente. In 1784, tenotomy was successfully practised for the first time by Thilenius, of Frankfort, for the cure of equino-varus. The next operation of which we have mention, was that performed by Sartorius, in 1806; the result was not, however, favourable; indeed, we even wonder at the happy result in the preceding instance, when we learn that the method of operating adopted was by a large dissection with a free external wound. Subcutaneous tenotomy had not as yet been practised; it was reserved for Delpech to make this last and great improvement in the treatment of talipes. The rules which he laid down some few years later are, as our author states, "absolutely those which guide the surgeon at the present day." Stromeyer afterwards practised Delpech's operation extensively, although, undoubtedly, the merit of the procedure is due to Delpech.

In Chapter II., Mr. Brodhurst passes to the consideration of congenital talipes, and lays down the division of the various forms of the distortion. This portion of the work is well illustrated, and the description of the tissues at fault is drawn with exceeding clearness. The etiology of congenital talipes is next entered upon. The different opinions as to the cause of the affection may be classed as follows:—

1st. Malformations and displacements of the tarsal bones.
2dly. Affections of the muscular system.
3dly. Malposition in utero.
4thly. Disordered nervous influence.

The first three causes assigned cannot, in the opinion of our author, be substantiated by observation, for he adds, at p. 48, "It may be safely said that the tarsal bones are never primarily affected, but, being acted upon by the muscles, are twisted on their axes." * * * "The muscles are doubtless the agents through which the tarsal bones become rotated, but being themselves under the influence of the nervous system, other agency than that of the muscles and ligaments is involved in the production of congenital distortions." We are also told that the opinion of Cruveilhier, that malposition of the fœtus in utero is the exciting cause, is equally untenable. With regard to the fourth and last cause mentioned above—viz., disordered nervous influence—Mr. Brodhurst informs us that club-foot, and all other distortions, are most frequently met with in those fœtuses in whom there is deficiency or marked change from the normal state of the brain and spinal cord. In the anencephalic monster, these deformities are most common.

The causes of non-congenital talipes, which are next considered, are arranged by the author under the following heads—paralysis, spasm, inflammation, voluntary position, and debility. This chapter forms one of the most interesting in the volume, and is fully illustrated by clinical cases. With some remarks upon the structural pathology and degeneration of muscles, and the reunion of tendons, Mr. Brodhurst then passes to the most important topic, practically, connected with the deformity in question—viz., the treatment. To use his own words, "The treatment of talipes resolves itself into, *first*, the removal of distortion and restoration to the normal position of the limb; and, *secondly*, the restoration of function." The operation of tenotomy, we are informed at page 113, is only useful in the strictest sense to *facilitate* mechanical treatment; an opinion in which we most heartily concur. In the adult, especially, tenotomy alone does little or nothing towards the immediate reduction of the distortion. At the same time Mr. Brodhurst says, and in this point we do not altogether agree with him, that there are few cases in which extension alone is to be preferred to tenotomy. Upon this topic, we would refer our readers to the admirable remarks of Dr. Little, which have recently appeared in the last numbers of the *London Lancet.*

The period at which, in cases of congenital talipes, the author prefers operating, is from four to six weeks after birth, provided the infant be robust. The after treatment consists in the application of proper extending apparatus, and it is safest, according to the author, not to commence the extension of the heel until the process of reunion shall have begun. If much elongation of the achilles tendon be desired, it must be obtained during the second and third week after the section.

We cannot bring our hasty notice of Mr. Brodhurst's monograph to a close, without expressing our satisfaction with the volume. We have been forcibly struck during its perusal with the pains-taking care of the author to establish in each case a correct diagnosis of the deformity in question, and we entirely agree with him in the following deprecation of unnecessary and hasty operative interference: "Much obloquy has been cast on orthopædy in consequence of the abuse of tenotomy. The senseless division of tendons on every possible occasion, and without reference to the cause of distortion, has occasioned infinite injury to the cause of orthopædy; congenital and non-congenital affections being similarly treated by those who, through ignorance of the pathological condition of parts directly or indirectly involved, are unable to form an accurate diagnosis, to distinguish between the various forms of non-congenital distortions, and to decide between cases fitted and unfitted for the section of tendons." J. H. B.

Art. XXIII.—*Pathological and Surgical Observations: Including a short Course of Lectures delivered at the Lock Hospital, and an Essay on the Surgical Treatment of Hemorrhoidal Tumours.* By Henry Lee, F. R. C. S.. Surgeon to the Lock Hospital, Assistant Surgeon to King's College Hospital, etc. London: Churchill, 1854. 8vo. pp. 232.

The volume before us comprises a series of surgical papers from the pen of Mr. H. Lee, of London, Surgeon to the Lock Hospital and Assistant Surgeon to King's College Hospital. Some of these papers have especial value from the fact that they are founded upon direct observation, and also because the results arrived at differ in many respects from opinions hitherto generally received. A subject which seems to have engaged the attention of Mr. Lee more particularly, and one which he has most patiently examined, is a study of the "Causes, Consequences, and Treatment of Inflammation of the Veins." This article is a continuation of a dissertation to which the Jacksonian prize was awarded in 1850.

The main conclusions arrived at in this last publication are, as stated by the author: "1st. That inflammation, both of the veins and capillary vessels, usually depends upon irritation, communicated to them through their contents. 2dly. That pus is capable of producing such irritation, when detained in contact with the lining membrane of the veins; but that it may be conveyed along their channels, without leaving any trace of its passage. 3dly. That pus, under ordinary circumstances, cannot circulate in living vessels, in consequence of its power of determining the coagulation of the first portions of the blood with which it is brought in contact. 4thly. That when pus is carried along a vein it is in consequence either of the disturbance of the coagulum which has first detained it, or of the blood having, in some measure, lost its natural power of coagulation."

Mr. Lee does not, in his present paper, recapitulate the evidence upon which the foregoing propositions are based, but proceeds to a review of the labours of other physiologists upon the same subject, and to a still further illustration of his own conclusions. He advances a series of experiments, performed by himself and others, and also a collection of clinical cases, which have led him to the belief that the injection of putrid substances into the blood does not, as is generally supposed, prevent coagulation from taking place, but that, on the contrary, such coagulation is induced and assisted. Of all foreign substances, none possess this power in so marked and rapid a degree as pus. It is to this fact the author attributes the formation of the large patches of congestion found in internal organs when pus has accidentally entered into the circulation; and to the more feeble influence of putrid fluids, or of mercury, the development of patches of less size.

From the physiological analysis of these affections, Mr. Lee deduces two principal indications: 1st. That in phlebitis there generally is a twofold disease—viz., a local inflammation and a constitutional infection—hence the treatment to be pursued should be local depletion, whilst at the same time tonic constitutional remedies should be made use of. 2dly. Direct experimentation has taught him, that when a putrid element has been introduced into the blood, the mucous membranes of the intestines and liver are the principal channels by means of which the elimination of the morbid matter is attempted.

In an article at page 95 upon the deposition of fibrin from the lining membrane of the veins, Mr. Lee seems disposed to reject the views generally held by English pathologists, and which have lately been adopted by Hasse, relative to the character of the serous tunic of the veins. He here questions the correctness of the analogy which has been drawn between this membrane and the ordinary serous membranes of the body, in a pathological point of view. The deposits of lymph found in veins whose walls have become indurated, in true cases of phlebitis, result, in the opinion of the author, from the previous coagulation of the blood, and he believes that the visible appearances of inflammation extend to the walls of the vein and not from them; in other words, that they are secondary to the formation of the clot, and that they do not precede it. A repetition of the experiments of M. Gendrin, by the application of a double ligature upon the jugular vein, and by observation of the internal processes taking place, have led him to conclusions differing from those of the last-named observer, and which go to substantiate his opinions as already expressed. Thus he says (p. 99): "The principal conclusion to be drawn from the preceding experiment and observations is, that the analogy which has been supposed to exist between the lining membrane of bloodvessels and the closed serous cavities of the body, cannot be maintained with regard to their morbid processes; and, consequently, that the mode of treating inflamed veins which has been based upon the supposed resemblance, is not founded upon sound physiological principles. Another point of secondary importance, but by no means devoid of interest, is the power which the blood is shown to possess of separating directly from itself a fibro-albuminous element, without the intervention of any membrane, and independent of any inflamed surface." * * * "That the changes in the blood which immediately precede such an action may be caused by the admixture of vitiated secretions—that the deposit, when formed, is capable of undergoing various changes, which issue in the formation of a purulent-looking fluid, and is capable during these changes of communicating irritation to surrounding parts."

The system of experimentation practised by Mr. Lee is interesting in the extreme; whether or not, however, its results will be borne out by future investigation, it is impossible for us to say. In the mean time, we cordially recommend the perusal of these papers to all of those who may be interested in the study of the diseases of the venous system. J. H. B.

ART. XXIV.—*The Practice of Surgery.* By JAMES MILLER, F. R. S. E., F. R. C. S. E., Professor of Surgery in the University of Edinburgh, etc. etc. Revised by the American Editor. Fourth American from the last Edinburgh edition. Illustrated by 364 engravings on wood. Philadelphia: Blanchard & Lea, 1857. 8vo. pp. 682.

WE have been so often called upon to express our approbation of Professor Miller's admirable surgical writings, that we feel that comment at the present moment is unnecessary. Indeed, the increasing demand which has necessitated a fresh edition of his Practice of Surgery, affords in itself ample testimony to the high position which his works occupy in the estimation of the surgeons of this country.

The volume before us is the fourth American reprint from the third and last Edinburgh edition. The supervision of the work, as it has passed through the press in this city, has been confided to the care of one of our most able surgical writers, who has, with characteristic good judgment, presented the volume to the medical public almost entirely devoid of cisatlantic annotations. In reality, Professor Miller's Practice of Surgery makes its appearance before us this time more nearly in the condition in which it left the author's table than it has ever done before. We are glad that such is the case.

Most of the notes which have been added by the present editor, refer almost entirely to American surgery, and could not with propriety have been omitted from a volume intended as a guide to American students and practitioners. The admirable operations of Drs. Sims, of N. Y., and Bozeman, of Ala., for the relief of vesico-vaginal fistula, are fully described at page 565. The success of these operators in the treatment of this dreadful malady has been such as to lead us no longer to look upon the result of all surgical interference as so "discouraging" as Professor Miller is inclined to consider it.

The puncture of the bladder through the symphysis pubis, as suggested by Dr. Brandes, of Jersey, and practised in this country by Dr. Leasure, of Pa.,[1] is also alluded to; a proceeding which, it appears to us, may be resorted to with advantage in many instances of retention of urine, especially in those cases where the bladder retains its normal position. We also observe, at page 630, a somewhat elaborate extract from the various papers of Dr. Reid, of Rochester, N. Y., relative to the reduction of luxations of the femur by manipulation alone without extension, a plan of treatment which is now generally and deservedly coming into vogue, and which has been attended with much success.

Many additional illustrations have been introduced into this edition, and although some of them strike us as familiar, having done duty already on more than one occasion, yet certainly they enhance the value of Professor Miller's useful treatise; and we doubt not that the present edition will prove as deservedly successful as its predecessors. J. H. B.

[1] See this Journal for April, 1854, p. 403.

# QUARTERLY SUMMARY
# OF THE
# IMPROVEMENTS AND DISCOVERIES
# IN THE
# MEDICAL SCIENCES.

## ANATOMY AND PHYSIOLOGY.

1. *Researches on the Histology of the Nervous System.*—Prof. Jacubowitsch, a young Russian physiologist, has been laboriously engaged, for the last four years, in the microscopical study of the nervous centres. His discoveries and drawings have recently excited great attention in Paris, and have been most complimentarily noticed by M. Flourens at the Academy of Sciences.

The following is the *résumé* of a communication made by him to the Academy, drawn up by himself and M. Castelnau, the editor of the *Moniteur des Hôpitaux*.

1. The cerebro-spinal system is composed of three descriptions of cells, which, while assuming the essential form of the animal cell in general, are distinguished by the following special characteristics: 2. Axis-cylinders arise from the periphery of these cells, which by their number distinguish each species of cell. (*a*) In the first species, or *multipolar* cells, the number of axis-cylinders radiating from the periphery varies from three to eight, and is habitually three or four. The form of this cell is irregular (*b*) in the second species, or *fusiform* cells, the axis-cylinders are three in number, sometimes four, but never more. They assume the spindle form, and are much smaller than the multipolar cells. (*c*) In the third species, or *bipolar* cells, the axis-cylinders are but two in number. These cells are of an oval form, and in size are intermediate between the two other species. 3. (*b*) The *multipolar* cells are met with in the *medulla spinalis*, in the cerebellum, and in the *corpora quadrigemina*. It is remarkable that none are found in the *medulla oblongata*. In the *medulla spinalis* they are situated in the anterior cornua and in the gray substance. (*b*) The *fusiform* cells are found in the *medulla spinalis* and *oblongata*, in the cerebellum, in the *corpora quadrigemina*, and in all parts of the cerebral hemispheres, which are almost entirely formed of them. In the *medulla spinalis* these cells are placed in the posterior cornua. (*c*) The *bipolar* cells are found in the *medulla spinalis* and *oblongata*, in the cerebellum, and in the *corpora quadrigemina;* but the cerebrum does not contain any. In the *medulla spinalis* they are principally found around the central canal. They are very abundant in the *medulla oblongata*, constituting its greatest portion. 4. (*a*) The axis-cylinders proceeding from the *multipolar* cells form the nerves of motion; and it is for this reason that the author terms these cells, cells of *motion*. (*b*) The axis-cylinders of the *fusiform* cells form the nerves of sensation, and the cells are termed cells of *sensation*. (*c*) The axis-cylinders of the *bipolar* cells are in relation with the grand sympathetic; and the cells are termed *ganglionary* cells. 5. The same and different species of cells communicate with each other as follows: (*a*) The cells of *motion* communicate from one side to the other by the anterior commissure, or rather this commissure is formed by the intercrossing in every direction of the axis-cylinders

which proceed from these cells. Those of the same side also communicate by the axis-cylinders, which proceed directly from one to the other. (*b*) The cells of *sensation* communicate from one side to the other by the posterior commissure, or rather they constitute that commissure; but they remain parallel to each other, and do not intercross. Those of the same side communicate directly. (*c*) The axis-cylinders of the *ganglionary* cells pass by either the anterior or the posterior commissure; and thus communicate from one side to the other, like both the other species. Communications also take place between those of the same side. (*d*) Communications, moreover, take place between the different varieties of cells; but the author has only met with them in the cerebellum and in the *corpora quadrigemina*, in which the three varieties of cells occur. 6. The different species of cells are not equally abundant in all the regions of the *medulla spinalis*. Thus in the cervical and lumbar regions the cells of motion predominate, while in the dorsal region those of sensation are most numerous. 7. The *medulla oblongata* is purely and simply a prolongation of the *medulla spinalis*, a prolongation entirely formed of cells of sensation, containing in their centre a nucleus of ganglionary cells. 8. The cerebellum is formed of four elements, viz. (*a*) of three elements, constituting the white substance, and which are prolongations by means of the peduncles of the pyramidal bodies which furnish the elements of the cells of motion, of the restiform bodies which furnish the elements of sensation, and of the ganglionary element which enters with each of the other two. (*b*) Besides these three elements, the periphery, or cortical substance of the cerebellum, is formed of characteristic pyriform cells peculiar to this organ. From these pyriform cells prolongations are sent to the surface of the orgun, forming a layer termed by the author the *couche en baguettes.* 9. The *corpora quadrigemina*, formed by the prolongations or the peduncles of the cerebellum, by the restiform bodies, and by the horseshoe shaped commissure, contain the three varieties of cells which they derive from these various origins. But this is the last point where these three varieties are found together. Above this, in the hemispheres, as already stated, the cells of sensation, of which the *corpus callosum* forms the commissure, are alone met with. 10. With the exception of the optic, the olfactory, the auditory, the vagus, the glosso-pharyngeal, and the hypoglossal nerves, which only consist of cells of sensation and ganglionary cells, all the nerves are formed of the three varieties of cells, with this difference among them, that the nerves of motion contain especially the cells of motion, and so on. 11. Besides the elements now described, the cerebro-spinal system contains a special connective tissue uniting the other elements, and which differs from the connective tissue of other organs by not containing any cells. It is, moreover, in infinitely small proportion as compared with the nervous tissue, and seems to play no other part than that of a bond of union. 12. These three categories of cells vary in different species of animals. They are smallest in size in man, and in general they are small in a proportionate degree to the intellectual development. The number of the nervous cells bears no proportion to the size of the brain.

From this brief *résumé*, M. de Castelnau observes, we are enabled to deduce some of the principal consequences of the facts upon which M. Jacubowitsch's researches are based.

1. The three entirely distinct functions of the nervous system, motility, sensibility, and organic action, are not only exercised by three different orders of nerves; but, moreover, these orders of nerves take their origin in different central anatomical elements.

2. The *medulla spinalis*, whence arise the general nerves, contains equally and naturally the three orders of elements; but the brain, the organ of the intellect, contains but the elements of sensibility, and the nerves of the special senses are also made up of the same element, with which is united in small proportion only the ganglionary element.

3. The element of sensibility is in different dimensions in man and animals, being larger in the former and smaller in the latter; so that for even an equal cerebral mass the human brain is much richer in sensible elements than is that of animals. To go beyond this, and to determine the relative richness of

each man, and especially of each human race, does not seem to be impossible. Will it ever be accomplished? That is a question we must reserve for future solution, but still with a doubt accompanied by much hope.

4. M. Jacubowitsch's researches scarcely promise less to the pathologist than to the physiologist. They have already shown that in affections of the nervous system, in which the most minute ordinary examination could detect no material lesion, such lesion was nevertheless considerable, since one or more of these orders of elements had become greatly altered in their form, or even had undergone destruction. This single result sufficiently indicates the brilliant horizon that may be opening to the pathological anatomist. If it exhibits to us clearly but a small part of that which we now seem to have a glimpse of, M. Jacubowitsch will not have rendered less service to the practitioner than to the physiologist and the true philosopher.—*Moniteur des Hôpitaux*, Sept. 8, 1857.

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2. *On the Structure of the Nervous Centres.*—Prof. LENHOSSEK has communicated to the French Academy of Sciences an interesting memoir on this subject, of which the following is an abstract:—

"It results from my researches, 1st. That the central nervous system is composed of gray substance, of white substance, and of an intermediate substance, termed the *gelatinous substance of Rolando.* 2. That the gray substance is formed of a general hyaline mass, having three kinds of nerve-cells: (*a*) Nerve-cells with all their attributes, generally diffused; (*b*) Large nerve-cells with all their attributes, united into groups. These are seen in the motor columns, in the sensitive columns, and elsewhere. (*c*) Spherical-nerve cells with all their attributes, filled with a deep brown pigment. These form only the ferruginous substance, and the black substance of Soemmering. 3. That the white substance is formed of primary fibres, which terminate in the form of radiations in the different organs of the central nervous system. 4. That the so-called *gelatinous* substance is formed by the gray substance, which traverses, in the form of network, the fasciculi of the white substance. 5. That the gray substance has the following relations: (*a*) In the spinal marrow it constitutes four columns, two anterior motor and two posterior sensitive, united together by the gray commissure: (*b*) In the *medulla oblongata* these four columns change their relative position, the anterior columns becoming internal, and the posterior external. They preserve this juxtaposition throughout the extent of the rhomboidal sinus. Farther on, the motor columns are continued alone to the bottom of the third ventricle, terminating in the infundibulum. The sensitive columns, on the contrary, pass into the optic *thalami* and the *corpora striata.* (*c*) At the point where the juxtaposition of the four columns takes place, there the commissure disappears, and the median *cloison* of Vicq d'Azyr commences, this being formed by a prolongation of the gray substance. This *cloison* is continued through the entire length of the *pons Varolii.* 6. That in the spinal marrow the white substance of the one side is completely separated from that of the opposite side by the anterior and posterior longitudinal groove; and in the *medulla oblongata* and *pons Varolii* an analogous separation is produced by the *cloison* of Vicq d'Azyr. 7. That at the point where the juxtaposition of the four columns of the gray substance takes place, the white substance proceeds more and more forwards until the gray substance at last remains exposed in the rhomboidal sinus. 8. That the primary fibres of the roots of all the nerves arise in the gray substance. (*a*) In some cases these fibres proceed from prolongations of the nerve-cells. (*b*) But, most commonly, they arise in groups, without its being possible to determine their origin. These fibrous groups traverse the white substance in different directions, in order to form the roots of the nerves at the surface. They never contribute to the development of the white substance, nor does the latter furnish any fibres for the roots of the spinal nerves. 9. That the motor roots of the spinal nerves, and of the motor cerebral nerves, such as the hypoglossal, the external and internal motors of the eye, the facial, the small portion of the *trigeminus*, and the common ocular motor, take their origin only in the motor columns. 10. That the sensitive roots of the spinal nerves, and of the sensitive cerebral nerves—

as the auditory, the large portion of the *trigeminus*, the optic, and olfactory—proceed only from the sensitive columns. 11. That the roots of the mixed cerebral nerves, as the two superior roots of the accessory nerves of Willis, and the pneumogastric, arise in both the motor and sensitive columns. 12. That there are four kinds of crossings in the spinal marrow, *medulla oblongata*, and *pons Varolii*. (*a*) In the spinal marrow, the primary fibres of the motor roots cross in front of the central canal, and the fibres of the sensitive roots cross behind it. These intra-crossings are produced by a portion of the primary fibres of the roots taking their origin in the opposite side. (*b*) In the *medulla oblongata* and *pons Varolii*, the primary fibres of the roots of the cerebral motor nerves, and only the motor portion of the mixed cerebral nerves, intercross at the middle of the motor columns, for the same reason as in the spinal marrow. (*c*) In the *cloison* of Vicq d'Azyr there is an intercrossing from right to left of some of the fibres of the white substance of the *medulla oblongata*, and of the *pons Varolii*. (*d*) There is a crossing of the six walls of the fasciculi of the white substance, and of the *medulla oblongata*, in front of the central canal, known under the name of the *pyramidal decussation*. 13. That the primary fibres of the roots of the nervous plexuses of the pia mater, as also those of all the roots of the accessory nerves of Willis (except the two superior roots), arise from all the periphery of the gray substance. In the plexuses at the surface of the pia mater are found: (*a*) Nerve-cells interposed between the primary nervous fibres. (*b*) Nerve-cells in groups, suspended and floating at the external surface of the nerves of the pia mater. These latter are filled with pigment. 14. That the two olivary bodies are composed of two substances, an external, gray, having convolutions, and an internal, white. The white substance is formed by the irradiation of the primary fibres of the peduncles of these bodies, which take their origin in the motor columns, and by the transverse commissure which traverses the *cloison* of Vicq d'Azyr. 15. That the central canal of the spinal marrow runs along its entire length, and opens into the *calamus scriptorius*. The walls are formed internally by a covering of cylindrical epithelial cells, and externally by a layer of the longitudinal fibres of Clarke, which extend into the epithelial layer of the rhomboidal sinus. In the lumbar region a granular mass is interposed between this fibrillary layer and the epithelial cells. 16. That on each side of the central canal there is a large vein, which successively bifurcates in the region of the *medulla oblongata*, and in that of the medullary cone."—*Moniteur des Hôpitaux*, Oct. 27, 1857.

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3. *On the Nerves of the Intestinal Walls.*—G. Meissner looks upon the areolar tissue between the muscular and the mucous coats of the intestines as one of the parts most richly supplied by nerves in the entire body. These nerves, by numerous anastomoses, form a network, the finest twigs of which appear to penetrate the muscle. The primitive fibres for the most part, and perhaps entirely, belong to the kind without any double contour, and are beset by numerous nuclei. They form the finer and thicker branchlets, and are comprised in nucleus-holding sheaths, in numbers varying from five to twenty; whilst the finest branchlets only contain from two to three primitive fibres. The small intestines appear to be the most rich in nerves, but in the walls of the stomach the nerves are very sparing. In the walls of the intestine the number of ganglia in the nervous plexuses is immense, corresponding for the most part with the thickness of the nerve-branches in which they are found; and in the small intestines almost every nerve-branch leads to a ganglion. The largest observed by the author consisted of from thirty to fifty cells; but they ordinarily contained from five to ten, having the ordinary appearance of ganglion cells. In man, pigment granules were often to be seen as contents of the cells, but in the calf they were found to be quite clear and colourless. Many of the cells were bi-polar, and this was evident whenever a single cell was seen inserted in the course of a primitive fibre without a ganglion being formed. Such cells were generally spindle-shaped, and projected themselves at opposite poles into a fibre. Besides bi-polar cells, some were seen from which, either at one side or both poles, two fibres passed close to each other. The ganglia in the stomach are not relatively less than in the intestine. The ganglion cells

in the stomach are larger than those of the intestinal walls. The author describes the best method of examining the nerves and ganglia of those parts, and speaks of the fresh intestine being sufficient, by the aid of acetic acid, for the examination ; but inasmuch as this method is tedious, moderately concentrated pyroligneous acid affords the greatest help, which, after some time, makes the areolar tissue very transparent, leaving the nerves and ganglia unaltered. After dilute pyroligneous acid has acted for some days, acetic acid proves very serviceable.—*Brit. and For. Med.-Chir. Review*, Oct., 1857, from *Henle und Pfeuffer's Zeitschrift*, Bd. viii. Heft 2.

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4. *On the Function of the Thyroid Body.*—Dr. PETER MARTYN communicated to the Royal Society a paper on this subject. After referring to the form, situation, connections, and internal structure of the thyroid body, its large supply of blood, and its capability of sudden alterations of bulk, the author briefly adverts to the unsatisfactory explanations which have been offered as to its function, and then proceeds to state his own views, as follows :—

"The upper part of the trachea, the larynx, and the passage of the fauces and mouth constitute the organ of voice ; the two former are the essential or voicing part, as mechanicians call it, that which produces the tone. The larynx and trachea—taking a share in other functions and being associated by juxtaposition and attachment with contiguous organs—are always pervious and open for respiration ; lengthen and shorten, fall and rise with the œsophagus in deglutition, and bend and turn with the universal motions of the head and neck.

"To admit of this great mobility and flexibility, a certain structure is necessary. The larynx is a triangular box, inclosing the apparatus of the chordæ vocales ; its two cartilaginous sides or alæ, diverging from the front, are not fixed, but free at the back, being completed by soft parts ; the trachea is composed of a succession of incomplete cartilaginous hoops or rings lying apart, the back and intervals being made up and the tube completed by soft membrane.

"Now the structure of a wind instrument, such as that of the human voice, requires the opposite properties. It must be rigid, tense, and inflexible. The qualities of the tone will be in exact proportion to these properties. How, then, is the soft, slack, and flexible vocal tube rendered thus rigid, tense, and inflexible, and fit to produce pure tone ? The muscles of the larynx, the thyrohyoid and sterno-thyroid, merely raise or lower, or fix it in any position : not lying on, or being parallel to, but diverging from the vocal tube, they cannot affect the object referred to. It appears to me that the thyroid body is provided for this purpose. The act of uttering a tone or of speaking stops the return of the blood from that organ, distends and renders it tense, and from the nature of its attachment round the top of the trachea and on the free sides of the alæ of the larynx, renders them fixed, firm, and tense also. This effect is aided by the aforesaid muscles, the thyroid body being interposed and giving them more advantageous mechanical action. The tension may be in any degree, and on energetic speaking or singing, the increased size of the part and the fulness of the collateral veins may be seen. This is the reason of its large supply and free distribution of blood. An instance of the want of this tension in an instrument may be seen in the bagpipe, where the porte-vent is attached to the chanter or voicing part by a flexible joint or by leather, and the tone is in consequence squeaking and uncertain.

"Besides thus giving rigidity, firmness, and tension to the organ of voice, the thyroid body also acts in another capacity—as a loader. In most musical instruments, loaders are used to render the vibrations slower and longer, and the tone in consequence fuller, louder, and deeper. They compensate for want of size and space, and give to a small instrument, or to a small vibrating or voicing part of an instrument, the power and quality of a large one. The human organ of voice is 8 inches long, and has the same power as, and better quality of tone than, the instrument that most nearly approaches it—the French horn, which is 9 feet, or the 'vox humana' pipe of a moderate-sized organ, which is from 4 to 8 feet long. This economy of size in the human organ has always been wondered at, but never, that I know, explained. Besides the thyroid body, another part, the structure of which I shall describe on another occasion, aids in this admirable economy. The nearer mechanism of human design approaches to perfection, the more it resembles similar structures in animal mechanics. The base of all stringed instruments and musical boxes is loaded: in most wind instruments the voicing part is thus loaded and strengthened, as in the organ-pipe, horn, flute, clarionet, &c. The bassoon, which in its lower notes approaches the human voice, is uncertain and wheezy in tone for want of this provision.

"When the thyroid body is small and thin, the voice will be found to be small and shrill; when large, the tone will be full and sonorous; when it is morbidly enlarged, the voice will be deeper and more base; and when very large, as in bronchocele, the voice will be smothered.

"The compass of the voice is in great part produced by the raising and lowering of the larynx, the shortening and lengthening of the vocal tube. The thyroid body partakes of this motion, at the same time firmly fixing and rendering tense the parts in each position. By its change of shape, bulk, and density—flattening and thinning when the larynx is raised, enlarging and bulging when it is lowered—it aids in giving the particular tone or pitch, high and acute in the first case, full and deep in the second; and, in like manner, by its varying shape, bulk, density, and pressure, it takes a great part in producing the wonderful qualities of modulation and expression peculiar to the human voice. In animated conversation, declamation, and singing, this may be seen.

"Its function then appears to be threefold—rendering the slack, mobile, and flexible vocal organ or tube rigid, tense, and inflexible, and fit to produce pure tone; by its bulk and density acting as a loader and strengthener, making the tone more sonorous, full, and deep, and thus compensating for want of length and size in the organ; and finally, by its varying shape, bulk, density, and pressure, furnishing an important aid in producing the inimitable qualities of modulation and expression enjoyed by the human voice.

"That it is a part of the organ of voice and an important accessory in giving it perfection, may be inferred also from its situation on the larynx and trachea, and its being supplied by the same nerves—its being largest in man, where the voice and speech are perfect—its being proportionally larger in women and children than in men, their smaller and more mobile organs requiring its peculiar aid. Among the lower animals, it is present (at least in a fully developed condition) only in the Mammalia, but among them there is a remarkable exception in the Cetacea—they have it not, and they have no voice. In Birds, which have such great power and modulation of voice, the structure of the vocal organ and tube is different from that in man, and sufficient in itself to produce these qualities.

"The importance of the thyroid body must be admitted when it is shown to be necessary for the perfection of the voice, and hence of speech—that great and indispensable agent in the cultivating and advancing the highest faculties of man."—*Med. Times and Gaz.*, Oct. 24, 1857.

## ORGANIC CHEMISTRY.

5. *Method of Clinically Determining the Amount of Sugar in Diabetic Urine.*—Dr. Garrod brought before the Medical Society of London (Oct. 10, 1857) a method recently discovered by him of clinically determining the amount of sugar in diabetic urine, exhibiting at the same time a small instrument, named a *Glucometer*.[1] It is constructed upon the fact that glucose, or diabetic sugar, when boiled with a solution of carbonate of potash, gives rise to an amber

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[1] The instrument is manufactured by J. Coxeter, Grafton Street East.

colour, and that the tint is in proportion to the quantity of sugar. The apparatus consists of a standard, a graduated tube of the same calibre as the standard, and an accurately divided minim measure, the standard being filled with a solution of the exact tint produced by a known quantity (half a grain) of the diabetic sugar to the fluid ounce. The following is the method of using the glucometer: A small quantity of the urine, say half a fluidrachm, either previously diluted or not, according to circumstances readily ascertained, is to be accurately measured in the small minim tube, and mixed with the same bulk of a solution of carbonate of potash of a given strength, and after the measure has been washed out with a drachm or two of distilled water, the whole is to be kept at the boiling point over a spirit-lamp for five minutes, either in a large test-tube, or, still better, a very small flask. After cooling, the coloured liquor should be transferred to the large tube, and distilled water added until the tint exactly corresponds to that of the standard—a process which may be readily effected by holding the tubes side by side, directing them to a moderately bright light. All the required data for determining the amount of sugar are now obtained. Suppose, for example, that the half drachm of urine employed in the quantitative analysis requires to be diluted so as to occupy six and a half drachms before the standard tint is obtained, such urine would contain six grains and a half of sugar per ounce; for its bulk has been increased thirteen times, and therefore thirteen half grains, or six grains and a half, of sugar must be present. Again, suppose the urine had been diluted with three times its bulk of water before being employed in the glucometer, which when the urine is rich in sugar may be necessary, in order to prevent the graduated tube being of inconvenient length, then it is only required to multiply the amount of sugar by four to obtain the total quantity in the original urine. In the above-named experiment it would therefore be twenty-six grains in each fluidounce. Dr. Garrod alluded to various methods which had from time to time been employed for the purpose of ascertaining the amount of sugar in the urine in cases of diabetics; showed the difficulties which most or all of them presented, especially to the medical practitioner, which was practically proved by their non-employment, and expressed a hope that by means of the glucometer the clinical determination of sugar might become a matter of little difficulty, and capable of being effected by any one engaged in the practice of medicine; and he also considered that such determination might prove of great value, not only in ascertaining the amount of disease under which any diabetic subject might be suffering, but also the value of various articles of diet and of different remedies in the treatment of this most important disease.—*Lancet*, Oct. 17, 1857.

6. *Mode of Detecting Sugar in the Urine, and on the Different Nature of certain Forms of Diabetes.*—Dr. A. Becquerel, Physician to the Hospital of La Pitie and Professor *Agrégé* to the Faculty of Medicine of Paris, has recently submitted a notice on this subject to the Medical Society of the hospitals there.

In this communication he says: "Five years ago, in my *Treatise on Pathological Anatomy*, and four years ago, at the hospital of Lariboisière, in a series of lectures reported in the *Moniteur des Hôpitaux*, I pointed out the following facts: First. That nearly all urines become discoloured, impart a green colour to, and even precipitate the cupro-potass solution of Barreswil, or that of Frommerz, if heated with these reagents. Second. That a great number of these same urines become brown, in like manner, on the addition of caustic potass, however pure that may be.

"Nearly a year ago, in a new series of lectures delivered at the hospital of La Pitie, I again strongly insisted on the erroneous conclusions to which the reaction afforded by these tests might lead; an opinion which was merely that prevailing among chemists who had paid attention to this subject at the time. I shall content myself here by showing you that nothing is more easy than to avoid this source of error, and that there is at our disposal a much more sure, expeditious, and certain method of detecting the presence of sugar in the urine than is usually employed.

"We take a certain determinate quantity of urine, say 60 grs.; this we treat with a small quantity of solid and crystallized acetate of lead, say 4 grs.; on heating this mixture, there is immediately formed a copious precipitate of a dirty white colour; the liquor is then to be filtered, and the solution treated by sulphate of soda in excess. If, for example, we have added 4 grs. of acetate of lead, we add 8 grs. of sulphate of soda. This being done, the mixture is again heated, and sulphate of lead is deposited; we then filter once more, and there is afforded a clear transparent liquid, which contains the sugar, when there is any, and some unimportant salts. The liquid thus obtained is neither acted on by the cupro-potass reagents, nor browned by the caustic potass, *unless* sugar is present. These two reagents are in this way perfectly reliable, very accurate, and afford no results when no sugar is contained.

"Should the urine under examination contain albumen, it is immediately coagulated by the acetate of lead at the same time as other organic matters, and gives no further trouble.

"Thus, in all cases where it is desired to ascertain the existence of sugar in the urine, whether along with albumen or not, we possess two excellent reagents in the cupro-potass solution, and in the caustic potass itself; only we require, in the first place, to treat the urine with the acetate of lead and the sulphate of soda, by which means we get rid of all such matters as decompose or discolour the cupro-potass or caustic potass tests.

"Since January, 1855, up to the present time, the urine of all the patients under my care—and these have amounted to nearly 2000—has been examined according to the above method. But besides this, in all cases where the presence of sugar was determined, there was also an examination made by means of the polarimeter, in order to discover the precise quantity of that principle contained in every thousand grains of urine. These numerous cases have afforded some curious results which I would desire to lay before the Society.

"Two species of diabetes appear to exist, viz., idiopathic diabetes, or diabetes properly so called, and symptomatic diabetes. With reference to diabetes properly so called, I have here nothing to say; it is a disease special in its causes, and having an origin, a progress, and a termination altogether peculiar to itself. That to which I at present allude is a disease of a somewhat different nature, viz., symptomatic diabetes. By this name I would refer to a certain number of cases in which the presence of sugar in the urine constitutes an accessory or supervening symptom. This is a symptom which, like albuminuria, is common to very different diseases, and one which would never be suspected unless the urine were submitted to examination.

"The characters of symptomatic diabetes are as follows:—

"1st. The quantity of sugar contained in the urine is never very great, although I have frequently found as much as 25 or 26 grs. in 1000, which is a pretty considerable proportion, but less than exists in idiopathic diabetes, where it often reaches as high as 40, 50, 60, and even 80 grs. in 100.

"2d. The urine is very little or never increased in quantity.

"3d. Although the density of the urine is no doubt increased, yet it is only to a very slight extent.

"4th. The sugar does not alter the other chemical elements contained in the urine.

"5th. There are no phenomena present attributable to the fact of sugar being contained in the urine; there is neither the increase of appetite, nor the immoderate thirst of idiopathic diabetes.

"Symptomatic diabetes shows itself occasionally in diseases of the brain and spinal cord, of the liver, of the digestive apparatus; in disease connected with parturition and lactation; and in other affections of various descriptions."—*Ed. Med. Journ.*, Nov. 1857, from *L'Union Médicale,* Aug. 1857.

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7. *On the Presence of Sugar in the Urine of Pregnant, Parturient, and Puerperal Women.* By Theodore Kirster, of Leipzig.—The researches of Blot on the presence of sugar in the urine of pregnant, parturient, and puerperal women, suggested to Dr. Kirsten the expediency of independent inquiries with a view to the verification of Blot's results. M. Blot arrived at the conclusion[1]

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[1] See Midwifery Report, British and Foreign Medico-Chirurgical Review, April, 1857.

that the presence of sugar in the urine of women under these circumstances was a physiological phenomenon ; and that its disappearance was the result of an intercurrent pathological condition. Dr. Kirsten observes, that if this conclusion were true we should possess in the disappearance of the sugar a tolerably sure measure of the condition of a puerperal woman, since this would indicate a commencing pathological disturbance, whilst its return would indicate reconvalescence. Dr. Kirsten examined the sugar relations in two women. His observations do not altogether accord with those of M. Blot: they rather point to the reverse condition—namely, that sugar is present in greatest quantity in the urine of puerperal women when the milk-secretion—whether through a pathological process, or the weaning of the child—is arrested. Thus he observed in several puerperal women whose children had died, that on the second, third, or fourth day after the death the sugar appeared in greatest plenty. After this time, the quantity fell in the same degree as the milk diminished ; but in four cases it could be demonstrated twelve days later. In three cases in which the patients were seriously ill in the puerperal state, and in whom the milk-secretion was almost null, the sugar was found in greatest quantity. One of these last women had suffered from common œdema during pregnancy. The examination of her urine revealed copious albumen, which diminished with the œdema, without disappearing altogether. Towards the end of pregnancy traces of sugar became apparent. She was delivered easily of a badly-nourished child. Repeated attacks of peritonitis followed. The milk-secretion was very scanty, and the milk very thin : sugar was present in the urine in abundance. In the second patient, who suffered from peritonitis, followed by pyæmia, Dr. Kirsten was able to detect sugar up to the day before her death, this substance having been present in great quantity at the beginning of her illness. The third case was quite similar. On the other hand, he was rarely able to discover more than mere traces of sugar in the most healthy women, who had well-nourished children and a superabundance of milk.

It hence appears that glycosuria belongs rather to pathology than to physiology. The key, Dr. Kirsten thinks, is to be found in the most recent researches of Bernard. This physiologist has shown that the formation of sugar in the liver is especially apparent when the abdominal circulation is increased, and the temperature rises. The biliary matter chiefly turns into sugar at a temperature of 40° Cent. No time was more favourable for this transformation than gestation, when the abdominal circulation and temperature are always raised to the necessary point for sugar-formation : whence we ought always to expect glycosuria in pregnant women. But as this is not the case, we are obliged to conclude that the greater quantity of sugar produced at this period is wanted for the nourishment of the child, so that it cannot be excreted. It would be interesting, with a view to the verification of this hypothesis, to examine the urine of women whose children may die, as quickly as possible after their death.

During the puerperal week the abdominal circulation is lessened, and the afflux of blood takes place towards the periphery, as is evidenced by the milk-secretion and sweats. This condition would not be favourable to the formation of sugar.—*Brit. and For. Med.-Chirurg. Review*, October, 1857, from *Monatsschr. f. Geburtsk*, June, 1857.

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8. *On the Elimination of Sulphuretted Hydrogen by the Lungs.*—M. Cl. Bernard desires to contribute to the solution of the question, why it is that sulphuretted hydrogen, which can be swallowed in large quantities with impunity, will cause the death of a medium-sized dog, when breathing in the proportion of $\frac{1}{800}$, and of a horse, when in the proportion of $\frac{1}{250}$. Two hypotheses may be raised. Either it is not absorbed in the alimentary canal, but digested, and its peculiar effects neutralized; or, after becoming absorbed, it is modified, and eliminated before it can reach the arterial system: the arterial blood being, in fact, the immediate vehicle of all physiological and toxical action, inasmuch as it is it which passes directly to the capillaries, where all organic changes take place. In the event of this last hypothesis being the correct one, we have to determine by what organ the elimination is accomplished. The pulmonary

surface would seem best adapted for the exhalation of this gaseous poison; so that it would sometimes perform the part of an absorbent surface, as when the sulphuretted hydrogen was contained in the air, or of an exhalant, when this substance existed in the blood. This example, which is by no means an isolated one in the economy, would seem to prove that the mucous surfaces, often indifferent in themselves, have no special action in relation to a substance, beyond that which is determined by the conditions under which such substance is presented to them.

M. Bernard performed numerous experiments in order to show that the elimination really takes place by the lungs. It was found that after throwing in the gaseous sulphuretted hydrogen, or a saturated solution of it, into the jugular, paper soaked in acetate of lead held at the nostrils became speedily blackened, and that almost immediately the substance entered the blood. This was repeated at intervals several times, without the animal seeming to suffer inconvenience. No ill effects result, because the substance is eliminated before it can reach the arterial system; while, when it is inspired with the air, the absorbed sulphuret is carried by the pulmonary veins directly into that system. In order to show that pulmonary elimination also takes place when the gas is introduced into the digestive canal, sulphuretted hydrogen was also injected into the stomach and into the rectum. When thrown into the stomach, the paper was found blackened after some seconds; but with respect to the rectum, this effect was not observed until sixty-five seconds after, the elimination not being completed under five minutes.

Owing to the facility of its elimination, M. Bernard suggests that sulphuretted hydrogen might possibly serve as a measure of the rapidity of certain physiological actions, and especially of the phenomena of absorption and circulation. Two experiments are related in illustration: three cubic centimetres of saturated solution of sulphuretted hydrogen were thrown into the jugular vein, and the first spot appeared on the paper at the end of three seconds. The same quantity was thrown into the femoral vein of the same dog, and the earliest manifestation took place only after six or seven seconds. When the quantity injected did not exceed that mentioned above, two or three expirations, and sometimes a single one, sufficed for the complete elimination of the sulphuretted hydrogen.

The question arises whether, when we introduce sulphuretted hydrogen either into the natural channels of absorption, or into the veins, the whole of it becomes eliminated by the lungs. Doubtless, by accurate measurement, this could be determined, but the probability is that it is not the case. Independently of other channels of elimination that may exist, it is probable that some of the sulphuretted hydrogen remains in the blood in the state of sulphur. Thus, when small quantities of the sulphuretted hydrogen are injected at a point as distant as possible from the lungs, no pulmonary elimination takes place, probably because there has been time for the whole to become modified and changed into sulphur before reaching the lungs. It was found that injecting small quantities into the carotid was followed by no elimination, until the repetition of the operation gave rise to a certain amount of saturation. Another proof that some of the sulphuretted hydrogen is retained in the blood, probably as sulphur, is found in the fact that in blood drawn from the animal, and manifesting no odour of sulphuretted hydrogen, the addition of hydrochloric acid, and the application of heat, lead to the disengagement of this gas.

The experiments made require to be repeated and multiplied, in order that the action of sulphuretted hydrogen on the economy should be completely studied. An important fact has, however, been thus far determined, viz., its great tendency, when circulating in the blood, to become eliminated by the lungs: and it may be asked whether such elimination is any way related to the therapeutical effects attributed to sulphureous medicines in certain affections of the chest.—*Med. Times and Gaz.*, Sept. 5, 1857, from *Archives Gén.*, tom. ix.

9. *Starch from the Animal Kingdom.*—Dr. PAVY exhibited to the Medical Society of London (Oct. 10, 1857) some of the newly discovered amylaceous material which is obtainable from the healthy liver, and which forms the source

of the animal sugar. In referring to the history of the saccharine secretive function of the liver, Dr. Pavy stated that, upon the announcement of the discovery by Bernard in 1848 that sugar was formed in the animal body, it was referred to a transformative action of the liver on an albuminous constituent of the portal blood. The celebrated experiment of puncturing the floor of the fourth ventricle, and establishing diabetes, rather supported this view; for it was thought that the irritation of the nervous centre stimulated the secretory action of the liver, and led to the production of a superabundance of sugar, which, accumulating in the circulatory system, was pumped off by the kidneys, and thus appeared in the urine. The next step of information removed the direct influence of the nervous system, and showed that the production of sugar could not be regarded as analogous to the process of secretion. In September, 1855, in fact Bernard announced, at the Académie des Sciences, that the formation of sugar continued for as many as twenty-four hours after death in a liver from which the blood had been entirely removed. If, for instance, the liver of a healthy animal be removed immediately after death, and a current of water be injected from the portal vein through its vessels, the whole of the blood is washed out, and the organ is also quickly deprived of the saccharine material it contained. Now, if such a liver be placed on one side and examined in a few hours' time, it will be found to have become strongly impregnated with sugar, the production of this material having continued in the exsanguine tissue of the gland. Upon this fact our knowledge had rested until within the last few months. During the early part of the summer, Dr. Pavy had noticed, whilst conducting his experiments on the *destruction* of sugar (which have led him to new and unexpected results, which he will shortly communicate to the profession), that he could isolate a material from the liver which subsequently underwent transformation into sugar; and he had recorded in his laboratory book the influence of chemical agents, such as acids, alkalies, and alcohol, on this material. He had since learnt, however, on his recent visit to Paris, that Bernard had most satisfactorily made out the nature and relations of this body, which, from the analogy presented in its chemical bearings to starch, he had called an animal amylaceous or starchy material. It had also been called glucogenic material, and this was probably the best term to apply to it at present, because it implied nothing more than we knew the substance in reality to be. The specimen of this glucogenic material which Dr. Pavy exhibited had been procured from the liver of a dog in the following manner: The dog had for some days been submitted to a strictly animal diet, so as to preclude the introduction of any starchy material into its system from the vegetable kingdom. After killing the animal, by the destruction of the medulla oblongata, the liver was removed, and a tube firmly ligatured in the portal vein, for the purpose of passing a current of water through the vessels to wash out the blood, and at the same time remove the sugar. In half an hour's time the water which had passed through the vessels was colourless and destitute of sugar, as was also the tissue of the liver itself. The organ was now cut up into small slices, placed in an evaporating dish, boiled in the liquid which exuded from it, and subsequently strained and pressed to obtain all the liquid that was procurable. The object, in fact, was to make a decoction of the liver, which holds in solution the glucogenic material, and has, thereby, communicated to it an opalescent or a milky appearance. This was then mixed with alcohol (in the proportion of one part of the decoction to about five of the spirit), and immediately a precipitate was produced, which was collected on a filter and dried, and formed the specimen then before the fellows of the Society. The substance before him was of a grayish colour, which resulted from contamination with albuminous matter. It might be made perfectly white by prolonged boiling in a solution of potash, which did not at all affect its properties. It was insoluble in alcohol and strong acetic acid. Its solution in water presented the same milky appearance as the fresh decoction of liver. It gave no reaction with the sugar tests, nor was it susceptible of undergoing fermentation. It was, however, readily convertible into dextrine and sugar by the same agents which produced this change in the starch of the vegetable kingdom. Indeed, boiling with acids and contact with diastase, saliva, pancreatic juice, blood, or any animal matter in a state of change, very readily effected its transformation into glucose, when it gave all the characteristic reactions of this substance. Dr. Pavy further stated, that by means of chemical agents and the microscope the natural seat of this material could be shown to be in the interior of the hepatic cells.—*Lancet*, Oct. 17, 1857.

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10. *On the Immediate Principles of Human Excrements in the Healthy State.*—Dr. W. Marcet communicated the following paper to the Royal Society:—

In a previous paper, I had the honour of communicating to the Royal Society the results of a first series of investigations on the immediate principles of the feces of man and animals; since then I have continued my researches on human excrements, being most ably seconded by my assistant, Mr. Frederick Dupré, Ph.D.

The new results obtained were the following:—

1. *Margarate of lime*, *phosphate of lime*, and *margarate of magnesia* were discovered to be immediate principles of human evacuations.
2. I found a new method for obtaining excretine, and its chemical formula has been established.
3. The fact that vegetable food induces the presence of margaric acid in excrements has been confirmed.
4. The existence of a comparatively large quantity of cholesterine in the spleen, which I had mentioned before as probable, has been confirmed.

When human feces are exhausted with boiling alcohol, the fluid being rapidly strained through a cloth, a clear extract is obtained, which, in cooling, yields a deposit; this substance being collected on a filter, is partly soluble in boiling alcohol, and there remains undissolved a residue insoluble in ether and alcohol. The residue in question being boiled with a solution of potash, dissolves almost entirely, and the addition of hydrochloric acid induces the formation of a precipitate in the solution. On examining this precipitate, it was found to consist of a crystallizable substance fusing at 60° Cent.: its structure and other properties were precisely those of *margaric acid*.

The acid filtrate contained *phosphoric acid* and *lime*. From several quantitative analyses, I concluded that there was more lime than is required to combine with the phosphoric acid in the form of the neutral phosphate, the excess of lime being exactly that which was necessary to convert the margaric acid into a neutral margarate of lime, $C_{34}H_{33}+O_3CaO$. Consequently it followed that the three substances existed in the form of *margarate of lime* and *phosphate of lime* as immediate principles of human feces.

The alcoholic filtrate from the deposit being allowed to stand for twenty-four hours, deposited another substance, of a nearly white appearance, and which proved to be *margarate of magnesia*.

The peculiar action of a vegetable diet on human feces was investigated by means of experiments undertaken upon myself, when I observed that an entirely vegetable diet was attended with the formation of a large quantity of margaric acid in the excrements—most probably not in the form of a margarate, but in the free state, inasmuch as it was obtained from the decomposition, with hydrochloric acid, of the precipitate induced by adding milk of lime to the cold and clear alcoholic extract of feces, after the separation of the above-described deposits.

In the month of December, 1855, I had an opportunity of noticing that during a cold night, when the temperature falls below the freezing point, *excretine* crystallizes readily and in large quantity in the clear alcoholic extract of feces; this method I employed as often as possible, to prepare enough excretine for its chemical analysis; but the cold weather not lasting long enough, and this season having been remarkably mild, I was compelled to adopt a modification of the process by milk of lime, described in my former communication.

Having prepared a sufficient quantity of excretine partly by the action of cold, and partly by means of milk of lime, the chemical composition of this substance was now determined. A qualitative analysis showed it to consist of carbon, hydrogen, sulphur, and oxygen (a); there was no water of crystallization present. Oxide of copper was employed at first for the combustions, but they were subsequently undertaken with chromate of lead, on account of the large proportion of carbon that excretine contains; no substance having been found to combine with it, its atomic composition was calculated from the assumption that one equivalent contained one equivalent of sulphur; and the following formula was obtained:—

| | |
|---|---|
| 78 eq. Carbon | 468 |
| 78 eq. Hydrogen | 78 |
| 1 eq. Sulphur | 16 |
| 2 eq. Oxygen | 16 |
| Atomic weight of Excretine | 578 |

In my former communication I had stated that when the tissue of the spleen is submitted to a process of analysis similar to that adopted for the extraction of excretine, a substance closely allied to cholesterine is obtained. This subject being one of great importance in a physiological point of view, I have resumed the investigation, and placed beyond doubt that this substance is really *cholesterine.* Its presence in the spleen is evidently independent of that which might exist in the blood retained by this organ after death. Is it that the spleen secretes cholesterine? This can only be determined by actual experiment; but it is very remarkable that a part of the blood which is supplied to the liver should come directly from an organ containing large quantities of a substance known to enter into the composition of the bile.—*Med. Times and Gaz.*, Oct. 24, 1857.

## MATERIA MEDICA AND PHARMACY.

11. *Permanganate of Potash as a Caustic, Deodorant, and Stimulant.*—Dr. D. F. Girwood extols (*Lancet*, Sept. 12, 1857) the permanganate of potash as a caustic, deodorant, and stimulant, and if what he states in regard to it shall be confirmed by the experience of others, it will be a most valuable medicinal agent.

"As a deodorant, as an escharotic, as a stimulant," he asserts, "it is a most useful application, combining, as it does, all these three qualities."

In a case of cancer of the os uteri, Dr. G. employed it in the double capacity of deodorant and escharotic, to destroy the fetid odour and to check the exuberant granulations, and induce a healthy appearance of the ulcerated surface. He injected twenty grains to the pint of water frequently during the day, with much benefit.

In a case of cancer of the breast he applied it in powder sprinkled on the sloughy mass, and as a lotion (ten grains to the ounce). From a gaping sore, in most offensive condition, it occasioned the wound to assume in some parts a disposition to granulate, and it entirely removed the offensive odour of the apartment.

In various other cases of offensive ulcers he has used it with equal advantage.

When it is wished to destroy masses of cancerous growth Dr. G. uses it in a solid form, either as a powder, or in a mass as the sulphate of copper or other caustics. A piece of lint wet with the lotion, of the strength of two to twenty grains, Dr. G. says, supersedes all the charcoal, yeast and carrot poultices.

A teaspoonful of the substance mixed with a tablespoonful of water in a dinner plate, and placed under the bed or anywhere convenient destroys all odour, and it has this great advantage over other deodorants, that it has no odour of its own. Most deodorants are themselves a nuisance, for while destroying one odour they create another; the permanganate is free from this.

12. *On the Oriental Bath.*—Dr. Haughton read before the Physiological Section of the British Association at its recent meeting at Dublin, the following interesting paper on this subject:—

"Some months ago, my attention being drawn to the oriental bath as a sanitary institution, I was induced to undertake a journey to the East, for the express purpose of determining what were its claims to consideration; and with this view I remained a month in Constantinople, collecting whatever information was to be had upon this subject, which is now commencing to attract so much attention in this country.

"This bath is best known to the western nations by the name of 'The Turkish Bath,' having been described under that title in most of the accounts which have appeared before the British public; but the truth is, that there is scarcely a nation in the East which does not possess a somewhat similar institution. There is a prevailing prejudice that the Eastern bath is only suited for tropical climates, and could not be adopted in these latitudes without danger; but we find that not only the ancient Greeks, but also the Romans, were acquainted with its virtues, and thought no expense too great to enable them to confer upon every citizen the luxury of cleanliness, the foundation of all sanitation.

"It was the custom of the Romans to build baths in the different countries which they conquered; and accordingly the historian Justin informs us that they introduced them into Spain, after the second Punic war, where they continued in operation long after their suppression in other parts of Europe. From thence, according to Baccius, they passed into Germany and France, and even into the British Islands; and there is reason to believe, that were antiquarian research directed to this point, remains would be found in these countries, not upon the same scale as those of France and Germany, but sufficiently perfect to show the principle upon which they were constructed. It is of great importance that this principle should be well understood, and especially that we should observe the difference between it and the Russian vapour bath, which it most resembles. It is simply that of an oven, large enough to walk about in, and lighted from the top, that you may see what you are doing. The medium by which the bather is surrounded is hot air, containing a little moisture, that the tissues may not experience too great desiccation from its contact, and that the softening of the loosened scales of epidermis, which is so essential, may be the sooner effected. In this bath, water is not absorbed by the skin, as in the Russian vapour bath, or the steam baths of this country; but it is, on the contrary, given out by both the pulmonary and cutaneous surfaces in great abundance.

"In the Russian bath, as described by Sir George Lefevre, the vapour is raised by pouring water over a stove, whilst the American Indian uses for the same purpose red-hot stones, covered by the inner bark of oak, and upon which a small quantity of water is poured, to prevent too great desiccation; thus resembling the Oriental bath in being a sweating process, while it differs from it in the subsequent immersion in cold water, which is not practised by the Turks, although cold plunge baths, and even douches, may be found in Egypt, in connection with the more essential processes presently to be described. In the Western steam bath the vapour is obtained by boiling water externally, and is conducted by pipes into the box or chamber which is employed; but it operates on the system rather by virtue of its derivative and sedative action, than in consequence of any depurative or diaphoretic effect. All admit the advantage of keeping the *cutaneous* surface in such a condition as may be most favourable for elimination of the different substances which are got rid of by means of this extensive system of drainage. But it is also worthy of remark, that the pulmonary mucous membrane is capable of acting as an excreting surface, especially when the body is exposed to the influence of hot air, as in the Oriental bath. In this way a large quantity of alcohol and nicotine is excreted in those accustomed to the use of spirits and tobacco—the powerful odour communicated to the breath betraying the exit of the poison. In experiments made on the lower animals with phosphorus, this substance has also been exhaled with the expired air, the appearance presented in a darkened chamber being that of waves of light issuing from the nostrils. Now, while this pulmonary transpiration is very much increased in a hot, dry atmosphere, it is almost completely checked when the air to be respired is heavily loaded with vapour, as is also the case with the functions of the skin. This is what constitutes the most striking difference between the bath of Eastern nations and the vapour baths of the West; and it is by no means an unimportant difference, inasmuch as the perspiration is intended by nature not merely as a means of ejecting superfluous moisture and effete tissue, but also as a natural safeguard to prevent the temperature of the body from being raised to an injurious extent. This safety valve does not exist in the vapour bath; and in using it our very lives may be said to be dependent upon a thermometer; for, evaporation being checked, the temperature of the body may be very quickly raised, and accidents are by no means rare from inexperience or carelessness in the administration of the different forms of steam baths. People also imagine that when in these baths they perspire very profusely, because on going out of them they are covered with large drops; but nine-tenths of these are simply the superfluous vapour which has condensed upon the body, and whose presence greatly impedes the natural exudation. In the Oriental bath, the small quantity of vapour which exists is only that which is produced by the water which is spilled on the hot floor during washing, and produces an agreeable soothing effect, instead of that suffocating sensation which one experiences in the Russian bath, in which, after having been half boiled, you are scrubbed with a hard brush, and flagellated with a bunch of twigs.

"The first chamber which is entered serves as a dressing-room, where the clothes are deposited previous to entering the hot chambers, and where the bather remains to cool himself on leaving them. For this reason it was called the frigidarium by the Romans, although the temperature is about 25° centigrade, or something over the summer heat of our thermometers. The next room is about 10° hotter, and is called the tepidarium, where the bather reclines, and drinks some hot coffee, or smokes, until he is in a proper condition for entering the third chamber, which is only about 5° hotter. I paid particular attention to this point when in Constantinople, always bringing my thermometer into the bath, and in no instance did I find the heat above 40° centigrade (104° Fahrenheit). Were it considered necessary, however, an enormous heat could be endured in the Oriental bath. A French gentleman, who was nearly suffocated by the vapour of the baths of Nero, near Pozzuoli, in a temperature of 122° Fahrenheit, was able to bear a heat of 176° Fahrenheit, in dry air, without inconvenience. The floor of the bath being the hottest part, the stratum of air next it ascends continually, carrying with it the superfluous vapour, which condenses upon the roof, and creates an imperceptible current, which suffices to purify the atmosphere. In the third or hot chamber, corresponding to the laconicum of the Spartans, and the calidarium of the Romans, the bather is shampooed—a kind of kneading of the muscles; and the dead skin, with its adherent impurities, is removed by means of the goat's-hair glove; and the amount of extraneous matter which is thus collected from the most cleanly person, will excite some surprise in those only accustomed to the use of soap and water.

"After the use of the glove the bather is next thoroughly washed with soap and hot water, performing part of the washing himself, as he is never naked during any part of the bath, the Turks especially being most scrupulous in this respect. When he gets up he puts on a pair of wooden pattens, to keep his feet off the hot floor, and returns to the second chamber, where he is lightly wiped, and again clad with warm towels, the head being bound up to avoid taking cold. The bath is now finished, but it would be imprudent to go out without remaining some time in the frigidarium to become cool. Here it is customary to lie down, well swathed in towels, and to drink some sherbet or coffee, and smoke. Nor does the bather require much persuasion to induce him to stop, as the sensations are so delicious, that it is only necessary to lie still to enjoy a mental calm and exquisite consciousness of health that few of us have ever experienced.

"Here we have a pleasure which is not a vice—a luxury which does *not* tend to shorten life; and which only awaits a sufficient demand to give encouragement to capital, that it may become at once cheap and universally attainable. There is no drug in the Materia Medica at all comparable with it as a purifier of the blood; for even poisons are thus eliminated from the system; and it is well known that alcohol is frequently taken by the Turks in large quantities without producing inebriation. Besides which, they enjoy an immunity more or less complete from various diseases which are here prevalent, and which would be quite unaccountable were the influence of the bath to be denied. Gout is scarcely known; rheumatism is rare, and soon cured; workers in lead paints seldom are affected by colica pictonum; chronic skin diseases are very rare, and pulmonary consumption much less common than with us.

"The Turks are indeed seldom ill, and are, on the whole, longer lived than the Western nations, if one may be allowed to judge from the number of old men to be seen in the streets, for unfortunately the government keeps no statistics. The physicians who have had the most experience in attending them are, moreover, of opinion that these happy results are really owing to the great attention which they bestow upon the functions of the skin; and Dr. Millinger (the Sultan's physician) informs me that the Turks themselves have always considered the public baths of Constantinople as supplying the place of a certain number of hospitals, which must otherwise be built. Of the former there are 300 open to the public, and every gentleman who can afford it has a private one in his own house; while there are only two or three public civil hospitals for a population of 900,000 souls, nor were these at all crowded when I was in Constantinople.

"Facts like these may lead us to inquire whether the office which nature has intended for the skin is not really much more important than we are in the habit of considering it; and whether cutaneous respiration be really restricted to the lower animals.

"It is an important practical question to the British public to know whether the Oriental bath is, in the first place, conducive to health, and, in the second, whether it is suitable to this climate. The first of these questions has been answered over and over again by travellers who have thus recruited their wearied frames, and by the experience of one-fourth of the population of the world, who look upon the bath as not merely the greatest of luxuries, but as a necessity, without which life would be a burden to them.

"We may perhaps be told that the bath has been discontinued in the west of Europe, because it was found unsuited for the climate and the genius of the people; but history furnishes other reasons to account for its disappearance—luxury and depravity did indeed enter the sanctuary, and in the endeavour to suppress them, the temple of cleanliness was destroyed. In the time of Constantine, a regular crusade was waged against them by the clergy, and the civil power being placed in their hands almost without restriction, they destroyed at one fell swoop the two greatest bulwarks by which the physical energy of the people had been preserved—bodily exercise capable of acting upon the entire muscular system, and a habit of cleansing the entire body. Thus fell the baths and gymnasia of Europe. The ancient bath is worthy of restoration, both as a hygienic and remedial agent. A beginning has already been made, and our native land has taken the initiative; the only building of this kind in the west of Europe being lately opened in the neighbourhood of the city of Cork, where it is used as a medical agent, with, I understand, considerable success. No doubt, further improvements will shortly be made, which will render it more serviceable as a remedy, both by additions and alterations in its manner of working. I myself have suggested the introduction of a certain measured quantity of pure oxygen gas, which may readily be done by means of small tubes, whenever that element may appear to require renewal; and I am not without hopes that I may soon be enabled to bring before the profession some further communication upon this interesting subject."—*Dublin Hospital Gazette*, Sept. 15, 1857.

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13. *On the Preparation of Valerianate of Ammonia of Definite Composition.*—This salt had hitherto not been obtained in a state of purity, and in the solid form. In fact, even in the most recent treatises on chemistry, the valerianate of ammonia is described as being liquid and amorphous; and the manufacturers of chemical products have been unable to supply it in a solid and crystallized state, pure, and of uniform composition. MM. Laboureur and Fontaine

have endeavoured to overcome this difficulty. Their process consists in preparing pure valerianic acid and ammoniacal gas, and then uniting the two bodies. In proportion as the combination takes place the salt crystallizes in a confused form, but under the microscope, four-sided prisms, either terminated in pyramids or bevelled at their extremities, are distinctly seen. The valerianate thus obtained has been analyzed by a commission of the *Academy of Medicine*, and its purity has been ascertained.

The following is the formula: Take monohydrated and pure valerianic acid; place it in thin layers in a flat capsule, covered with a perfectly fitting receiver; let anhydrous ammoniacal gas pass into the receiver, until the valerianic acid is saturated; preserve the valerianate of ammonia in small portions, in well-stopped bottles.—*Bull. Gén. de Thérap.*, tom. 52.

14. *Formula for a Liquor Cinchonæ to replace the Wine of Bark.*—M. DESCHAMPS proposes the following: Alcohol, s. g. 833, five ounces; water, twenty-seven ounces; sulphuric acid, s. g. 1845, fifteen and a half grains; yellow bark, three ounces; orange peel, four scruples. Macerate the entire for ten days, strain, and add to the strained liquor half its weight of sugar; dissolve the sugar, and strain. One ounce represents the infusion of half a drachm of bark.

The advantages of the preparation are said to be, that while it is comparatively cheaper than wine of bark, the sugar it contains will modify its action in the same manner as the organic matter contained in wine does; secondly, that its taste is more agreeable than that of wine of bark; thirdly, that the preparation will always be uniform; and fourthly, that children will not refuse to take it.—*Ibid.*

15. *Formulæ for the Gelatinization of Cod-liver Oil.*

*M. Stanislas Martin's Jelly modified.*—Take of cod-liver oil, two ounces; fresh spermaceti, two and a half drachms; simple, or other suitable syrup, and Jamaica rum, of each six drachms. Beat the ingredients together with the aid of heat, and when the mixture has acquired some consistence, pour it into a wide-mouthed bottle. *Cod-liver Oil solidified with gelatine.*—Take of pure gelatine, half an ounce; water, simple syrup, of each four ounces; cod-liver oil, eight ounces; aromatic essence, as much as may be sufficient. Dissolve the gelatine in the boiling water, and add successively the syrup, the oil, and the aromatic essence; place the vessel containing the entire in a bath of cold water; whip the jelly for five minutes at most, and then pour it, while still fluid, into a wide-mouthed glass bottle, furnished with a cork, or with a pewter cap, or if a bottle be not at hand, into a porcelain or earthenware pot, which should be carefully closed. *Cod-liver oil gelatinized with Carrageen or Irish Moss.*—Take of fucus crispus, half an ounce; water, eighteen ounces; simple syrup, four ounces; cod-liver oil, eight ounces; any aromatic, according to taste. Boil the carrageen in the water for twenty minutes; pass the decoction through flannel; concentrate it until it is reduced to four ounces by weight; add the syrup, the oil, and the aromatic; whip the mixture briskly, having first placed it in a cold bath, and pour it, while still a little warm, into the vessel intended to receive it. The syrup may be replaced by an equal quantity of Garus' elixir, mint, or vanilla cream, or rum, &c.

M. Sauvan proposes to combine cod-liver oil with Iceland moss. *Lichen and Cod-liver Oil.*—Take of Iceland moss jelly, four ounces; gelatine, four scruples; hydrocyanated cod-liver oil (to which two drops of essence of bitter almonds have been added), six drachms. Prepare the Iceland moss jelly in the usual manner; melt the gelatine and pass it into the vessel which is to hold it; then add the cod-liver oil; stir the entire with a spatula, until the mixture be homogeneous and the jelly begins to congeal. Dose—two or three spoonfuls daily.—*Ibid.*

16. *Caustic Glycerine in Lupus.*—The following formula is employed by Dr. HÉBRA, of Vienna: Iodine, iodide of potassium, of each one drachm; glycerine, two drachms. This is applied every second day by means of a brush; it pro-

duces pain which lasts for more than two hours; but it possesses the great advantage of curing lupus without giving rise to disfiguring cicatrices.—*Ibid.*

17. *On a Mode of Improving Cow's Milk and rendering it more easy of Digestion for Healthy and Diseased Children.*—Dr. GUMPRECHT, of Hamburgh, remarks that milk often disagrees with children, producing indigestion, acidity, flatulence, colic, diarrhœa, &c. &c. In consequence of this, it has been proposed to improve it by the addition of water and sugar of milk, which experience has proved to have imperfectly attained the object in view. Reflecting on the effect of salt in rendering the food for adults not only more palatable, but also more digestible, increasing the activity of the glands of digestion, and rendering the albuminous substances and fat soluble in the fluids of the stomach, Dr. Gumprecht was led to the idea of adding salt to milk, both for weaned and older children, with the result of not only preventing the derangement of digestion, but moreover of removing them in cases where they previously existed. No author who has written on the nutriment of weaned children has spoken of this most useful addition to milk; but a Dutch physician mentioned to Dr. Gumprecht, in conversation, that in his practice in Holland he had frequently added a little salt to milk for weaned children with most satisfactory consequences.

In the rural districts in Holland, salt is frequently added to the fodder for pigs and cattle, for the purpose of preventing diarrhœa, which so often exists in consequence of imperfect digestion, and this suggested the adding salt to milk, not merely for healthy children, but for strumous children and such as are affected with worms. Dr. Gumprecht quotes a passage from L. Nussdorff's *Lehrbuch der Gesundheitspflege,* 1856, on the importance of salt in the nutriment of man and animals.

With regard to the quantity of salt which should be added to the milk, it must depend on the age of the child. To render cows' milk like human milk, it should be boiled and skimmed, and a little sugar of milk and salt added.—*Dublin Hospital Gazette,* Oct. 1, 1857, from *Journal fur Kinderkrankheiten.*

18. *Mode of Preparing the Bran Loaf for the Use of Diabetic Patients.*—Mr. JOHN M. CAMPLIN gives the following formula for preparing the bran loaf, which Dr. Garrod considers the best substitute for bread, for diabetic patients, with which he is acquainted:—

Take a sufficient quantity (say two or three quarts) of wheat bran, boil it in two successive waters for ten minutes, each time straining it through a sieve; then wash it well with cold water (on the sieve) until the water runs off perfectly clear; squeeze the bran in a cloth as dry as you can, then spread it thinly on a dish, and place it in a slow oven—if put in at night let it remain until the morning, when, if perfectly dry and crisp, it will be fit for grinding. The bran thus prepared must be ground in a fine mill, and sifted through a wire sieve of sufficient fineness to require the use of a brush to pass it through; that which does not pass through at first must be ground and sifted again, until the whole is soft and fine.

Take of this bran-powder 3 ounces, Troy, 3 fresh eggs, 1½ ounce of butter, rather less than half a pint of milk; mix the eggs with part of the milk, and warm the butter with the other portion; then stir the whole well together, adding a little nutmeg and ginger, or any other agreeable spice. Immediately before putting into the oven, stir in first 35 grains of sesquicarbonate of soda, and then 3 drachms of dilute hydrochloric acid. The loaf thus prepared should be baked in a basin (previously well buttered) for about an hour or rather more.

Biscuits may be prepared as above, omitting the soda and hydrochloric acid, and part of the milk, and making them of proper consistence for moulding into shape.

If properly baked, the loaves or biscuits will keep several days, but should always be kept in a dry place, and not be prepared in too large quantities at a time.—*Med. Times and Gaz.,* May 2, 1857.

19. *The Chemical Properties of the Potato, and its Uses as a general article of commerce, if properly manipulated.*—Mr. J. W. Rogers read before the section of Chemical Science of the British Association, at its late meeting in Dublin, a paper on this subject, the object of which was to show that the matter of the potato was in reality equal in nutritive value to the dry matter of wheat, whilst the quantum of food produced from a given quantity of land was nearly four times that produced from wheat. Mr. Rogers exhibited some interesting specimens of the potato in meal, flour, etc.; and gave the following results of analysis:—

| | Starch. | Gluten. | Oil. |
|---|---|---|---|
| Components of the potato per cwt. | 84.077 lb. | 14.818 lb. | 1.104 lb. |
| " of wheat " | 78.199 | 17.536 | 4.265 |

And he gave the following important fact as to the quantum of food from an acre of land:—

| | Starch. | Gluten. | Oil. |
|---|---|---|---|
| Dry matter of potato . . . . | 3,427 lb. | 604 lb. | 45 lb. |
| " of wheat . . . . | 825 | 185 | 45 |

*British Med. Journ.*, Oct. 3, 1857.

## MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

20. *Case of Marshall Hall, with the Post-mortem Appearances.*—To render the case of this illustrious physiologist complete, it is necessary to go back some years previous to the appearance of the last severe and fatal symptoms; for some peculiar features connected with the earlier symptoms rendered the case somewhat different to those generally met with in practice, and made the sufferer himself, always patient, thoughtful, and suggestive, consider that it presented features worthy of notice; and also made him anxious that its investigation should be completed by a post-mortem examination.

His own account of an early inconvenience or difficulty in swallowing best explains the symptoms as they occurred: "Some fifteen years ago," he wrote to a friend, "I undertook to deliver two long and distinct courses of Lectures on the Practice of Physic, during the same winter." His custom was to lecture from six to seven, and then from eight to nine, in the same evening. He felt inconvenience during this winter from hoarseness and cough for the first time, and began to perceive that minute portions of food were apt to remain in his pharynx, and that after meals he occasionally raised some small portions. This difficulty of swallowing very gradually appears to have increased; and he was induced, some years ago, to consult Sir Benjamin Brodie and Dr. Chambers on account of the increasing symptoms of obstruction; but on Sir Benjamin passing a bougie, no evidence of obstruction by contraction of the œsophageal tube could be detected. Mr. Guthrie, whom Dr. Marshall Hall also consulted, told him that he was only suffering from what was called "clergyman's throat." But the dysphagia continued, and during deglutition much care was requisite in the act of swallowing, and food could not be hastily taken, and while in the act of swallowing much regurgitation could be heard by those sitting near him.

He considered this condition to be due to a defective reflex action which prevented the muscles of the pharynx from acting with sufficient power to propel all the food lodged in it; but the probability is, that there was some such dilatation of the pharynx at this early period as is sometimes met with, and which in a measure acts upon the aperture of the œsophagus mechanically, and thus interferes with the ready passage of food. Such were the symptoms which continued slowly increasing, but which never prevented a sufficient amount of food to be taken, both solid and fluid, to keep up proper nutrition, until about the end of 1855, when Dr. Marshall Hall first perceived that in the expectoration which he usually had in the morning there was occasionally a slight tinge of blood, and this especially after much speaking or exercise. The dysphagia also commenced from this time to be troublesome and serious.

Previous to this date Dr. Marshall Hall had retired from active practice in London, as he found his health was failing to a certain extent, and some spots of purpura appearing on his legs. He wisely determined at once to give up the anxieties of professional occupation, though it entailed the sacrifice of a large professional income. He made a tour of the United States in 1854-55, and spent the following winter and spring in Italy. He returned to England much better in health, but not improved as far as the throat affection was concerned. After a short stay in town, he went to Hastings, and came to town again in October following. It was now that the symptoms of permanent stricture of the œsophagus were fully established. He had some time ceased to partake of solid food; milk, cream, and coffee were the fluids he chiefly preferred. With the evident obstruction there was constant copious expectoration of purulent mucus, somewhat offensive in character, and occasionally during each day tinged with blood. He was seen in consultation by Dr. Williams, Mr. Cæsar Hawkins, Mr. J. R. Martin, and Mr. Pollock, all of whom were agreed as to the serious nature of the complaint. He was quite prepared for the expression of their most unfavourable opinion, and was even cheerful whilst under examination. In speaking to one of his medical friends, who was constantly with him whilst in town, he said, "I don't ask you what your positive opinion is as to my prospect of life, for no one can be certain of the result of a hidden malady; but I look upon my disease as a fatal one, and have long done so. I have no hope of recovery. I don't wish you to mention this to Mrs. Hall. I have no fear of death, and cannot be alarmed by the truth. My only wish to live is for the sake of others; but I am resigned to the alternative, if it be ordered that I should not live much longer." The calm, resigned, and almost cheerful manner in which he spoke at once showed the preparation and the courage of a man who knew his end was not far distant, though still, as ever, unselfish, considerate, and affectionate, for those dear and near to him.

Whilst in London he had a wish to have the nitrate of silver applied in solution to the supposed ulcerated part of the pharynx; but when advised not to employ it, he readily acquiesced in the opinion of those he had consulted. He had applied the solution to the throat when in the country, but had been apparently much distressed by it; and though he had expressed a wish for its application a second time, he evidently had no great desire to persist in its use, from the distress it had occasioned.

After a short stay in London he removed to Brighton. He now placed himself under the care of Mr. Wildbore, whose constant care and attention to him he always spoke of with much gratitude, and to whose note-book we are indebted for the remaining particulars of his case.

After being settled in Brighton, he complained of, and suffered much from cold. It always distressed his throat, and rendered more difficult the efforts of swallowing. His room was obliged to be kept at a temperature of from 70° to 75°; his diet was entirely milk, cream and coffee. In January this year he wrote to Mr. Pollock: "I have been for two months at Brighton, and the complaint has made no progress, but in cold foggy weather my dysphagia is always worse. I am intensely susceptible to cold. I have been many days lately without blood in the expectoration; but last night it came on after going to bed, without any assignable cause. Everything I take is apt to leave particles in my pharynx, even a light-boiled egg. Hence the cause of the irritation and consequent ulceration there. If so slight a thing will irritate and produce exudation of blood, there is surely ulceration there, and this, in fact, has all along been my opinion." We shall hereafter see how true was the opinion he had formed of his own case.

There was at all times, to a greater or less degree, "a stinging, bursting pain" behind the larynx; sometimes for a day or two it was absent. During February the symptoms were variable, the dysphagia increasing as the temperature became colder. Once or twice there was slight regurgitation of the fluid by the nose and mouth. Some considerable benefit was derived from sipping a solution of chlorate of potash in water several times a day, with marked temporary benefit to the swallowing, but the effect was not permanent.

In March he had a severe attack of gout, when much uric acid passed in the urine. This was relieved by small doses of potash sipped in water, and also used in an enema. The dysphagia slowly but gradually increasing, four pints of milk were now only taken in the course of the day, and it occupied nearly half an hour to get down half a pint.

On the 10th of March he walked out, after four months' confinement to the house. The sun was hot, but the wind very cold, and the following day he was confined to bed, suffering from bronchitis, and all his ordinary symptoms aggravated. During several hours no fluid could be swallowed, and on attempting to pass a tube for himself, an obstruction was met with, opposite, as he said, the first or second portion of the sternum. This attack left him very weak. He complained much of thirst, and said his feelings of hunger were dreadful. Still he was most patient, and even cheerful in conversation, under all his sufferings.

In a few days the attack of bronchitis passed off, and he now derived much comfort from supping iced milk and sucking small pieces of ice; but the exhaustion and emaciation were becoming considerable, and the quantity of fluid taken by the mouth was reduced to about two pints in the twenty-four hours. Mr. Wildbore therefore recommended him to allow the administration of nutritious enemata, of which the following was the mixture; five ounces of strong beef tea, one ounce of port wine, and three grains of quinine. This was given three times daily, and the whole quantity always retained. The quinine was added on account of his suffering from intermittent fever which came on every night. The enemata were evidently absorbed, for the bowels only acted once in three or four days under the influence of warm water enemata, with some salt dissolved in it, and this would be followed by a healthy motion.

On the 10th of April, for twenty-four hours, there was complete interruption to the passage of fluid through the throat; but on the following day he was again able to swallow milk and some wine-and-water. Towards the end of the month the difficulty of swallowing was so great, that if more than three teaspoonfuls were taken directly one after the other, the fourth would bring on cough, and the greater portion would be returned by nose and mouth, mixed with mucus, as if the fourth spoonful filled up the tube to the aperture of the glottis, and thus excited cough.

During the month of May he suffered much from hunger; but taking the enemata four and five times a day appeared to nourish him to the extent that he was able to bear the erect posture, which he could not a fortnight previously, owing to vertigo. The aguish attacks were also severe, and he took constantly about twenty grains of quinine in the enemata, which had the effect of relieving him, but produced deafness and singing in the ears.

In June the voice began to be affected; the expectoration, which had become white and frothy, was again purulent and offensive. The efforts to swallow were attended with much exhaustion, and the struggles to get fluid down were very great. The loss of voice at the end of June was unchanged; the "stinging, burning pain" greater, and debility increasing; the expectoration very copious. Notwithstanding his condition, about the middle of the month he ate a fair dinner of lamb and asparagus for three or four days consecutively, swallowing it all. Then came a cold wind and increased dysphagia.

In July, early in the month, he applied himself a four-grain solution of nitrate of silver to the pharynx five times. This increased the "stinging, burning pain" greatly for two hours after each application, but no beneficial result of any kind was obtained. Chills and profuse sweats attacked him every evening, and the aphonia continued. During July he gradually became weaker, and the quantity of fluid taken by the mouth was about a pint to a pint and a half of milk daily. It may be mentioned that nearly all the time he was at Brighton, up to the last few days of his life, he looked fresh and healthy, a circumstance somewhat remarkable.

By his own desire he went out, in the early part of August, in an open carriage, but all his symptoms were becoming worse: the breathing short and asthmatic, and the air-passages clogged with mucus. The rectum also became uncertain in its powers of retention, and the enemata were sometimes returned. On August 11th, at twenty minutes past eight, he died, maintaining his consciousness to within a few minutes of his death.

His friend, Mr. Wildbore, wrote of him, but a few days before his death, "It is wonderful to me how he bears up against his disease. He is ever thoughtful of, and kind and considerate to all around him, and most grateful for the least kindness or attention shown him; always interested in professional questions, and ever active in mind upon those subjects which have chiefly occupied his attention. He is most patient, and perfectly resigned." All who knew and watched him during the progress of his disease, and witnessed the high courage and true resignation with which he submitted to his sufferings and to the prospect of death, will feel that Mr. Wildbore's estimation and record of him was only what was just to the character of the greatest of English physiologists.

The *post-mortem* examination of the body was made by Dr. Ransom, of Nottingham, thirty-eight hours after death, in the presence of Dr. Hutchinson, Dr. Robinson, Dr. T. Wright, Mr. Higginbottom, Mr. Addison, Mr. Wildbore, and Mr. M. H. Higginbottom, and for the record of which we are indebted to Mr. Ransom.

The body was emaciated. No external marks of decomposition.

*Thorax.*—The lungs did not collapse on the cavities being opened. The right one was universally adherent by old adhesions; the substance of the lungs healthy; no pleuritic effusion.

The pericardium contained nearly two ounces of dirty red fluid. The heart was flabby (perhaps from cadaveric changes); it contained frothy blood in the right ventricle and auricle. The valves were competent. There were some atheromatous deposits on the inner surface of the aorta, which was stained a deep red.

The bronchial glands were larger than usual, soft and black.

On making examination of the parts higher up in the throat, it became evident that some undue thickening and adhesions existed behind the larynx. The latter was therefore removed, with the pharynx, the œsophagus and trachea. In doing this, the intimacy of the adhesions necessitated that the knife should be carried close to the bodies of the corresponding vertebræ; with every care, however, buttonholes were made in two or three places. On removal, it was seen that the walls of the pharynx were extremely thin, and that its cavity was dilated. Through the openings made by the knife there escaped a dirty-brown flaky fluid, of a creamy consistence. The adhesions were to the bodies of the sixth and seventh cervical and first and second dorsal vertebræ.

The parts removed, when examined, showed a stricture of the œsophagus, about the level of the eighth ring of the trachea, and a dilatation, with ulceration and vasculation of the œsophagus and pharynx above the stricture, to the extent of nearly three inches. The stricture was attended with but moderate thickening of the tube, and the aperture was not very small; but the membrane was folded in, so as to present a conical eminence upwards, the apex of which was opposite the narrowest part of the stricture, which here was rather larger than a goose-quill. In this way the passage was almost valved, and food would have had the tendency to pass down by the sides of the eminence into the pouches and sacculi of the ulcerated portion. Indeed, the finger passed down from above, previous to opening the œsophagus, could not enter the passage, though a similar difficulty did not exist if the finger was passed from below the stricture. The upper border of the ulceration was, on each side, about level with the bases of the arytenoid cartilages, but did not extend so high in the middle. The dilatation was, throughout, irregularly ulcerated, soft, pulpy, ragged, of a dirty-gray or slate-coloured, and with few loosely-adhering flakes on its surface. Its base was not much thickened, though here and there it was somewhat so, and felt firmer in such parts. The walls of the pharynx and œsophagus were perforated in several places, leading to pouches or sinuses amongst the muscles of the neck, having very thin delicate walls of false membrane. Two of these pouches were very large, and ran upwards on the outer surface of the thyroid cartilage, one on each side, as high as its upper border, the right pouch being the largest. A narrow slip of mucous membrane remained at the back of the trachea, but this at the lower extremity was quite undermined.

At the lower part of the dilatation the ulceration had nearly perforated the trachea through the posterior membranous wall, and had set free the right extremities of the fourth, fifth, and sixth cartilages. The pharyngeal mucous membrane above the ulceration appeared nearly natural, except for two or three little rounded elevations, as if there was a deposit in the mucous membrane, each less than half a pea in size. There was a small pendulous polypus attached to the thyro-epiglottidean fold. The œsophagus below the stricture was healthy.

In the mucous membrane of the trachea directly corresponding to the deep ulceration that threatened to perforate it, was a small deposit or growth—semi-transparent, solid, and slightly elevated. There was a similar one higher up, inside the cricoid cartilage, but it was more opaque and white.

The patch on the tracheal mucous membrane was cut across, and from a section of it were obtained cells which possessed all the characters of cancer-cells. They were delicate, large, irregularly angular, with elongated processes; some were, however, rounded, had peculiar large nuclei and nucleoli; often several of these in one cell, and sometimes a cell-wall around one or more of the contained nuclei. Some few of the nuclei presented a delicate, regular radial striation, which Dr. Ransom observes he had not before seen. These cells were contained amongst the meshes of the elastic tissue. From the whiter patch on the inside to the cricoid cartilage, similar cells were obtained, but they were fattily degenerated, and therefore less characteristic. From the base of the ulcerated surface Dr. Ransom found in parts examined no satisfactory evidence of the nature of the pathological process which had preceded; but amongst a mass of granular and fattily degenerated elements, several bodies were always seen resembling retrograde cancer-cells.

The fluids from the surface of the ulcer consisted mainly of molecular detritus and fat, in drops and granules, with a great number of epithelium scales, mostly of the scaly variety; but a few were cylindrical and ciliated, probably separated from the upper parts of the pharynx. In the little elevations on the mucous membrane of the pharynx nothing was found but globular corpuscles and cells filled with fat granules of various sizes; and one beautiful hexagonal crystal-like cystin was observed.

A portion of the pharynx and œsophagus, examined by Mr. Cæsar Hawkins, Mr. Pollok, and Mr. Holmes, curator of St. George's Hospital Museum, gave the following results:—

1. A portion of the disease was surrounding the great vessels in the neck, and apparently making pressure on the upper part of the pharynx. The interior appeared of a cellular character. Sections showed fibrous tissue, with numerous nuclear bodies, and much fat.

2. A small tubercle, beneath one of the rings of the trachea, contained an immense number of nucleated cells, resembling those of healthy epithelium, but of more curious form and size; also a good deal of fat.

3. A mass containing dark masses (of black pigment), otherwise exactly resembling the portion first mentioned.

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21. *Hæmophilia.* By Dr. Magnus Huss.—This term was first employed by Grandidier to designate that peculiar tendency to hemorrhage which characterizes some individuals and families. The following case, which is reported and commented upon at length by the well-known Professor Huss, of Stockholm, is almost unique of its kind.

Maria K., a servant, aged twenty-three, a country girl, the child of labouring people who had always enjoyed sound health, and exhibited no hemorrhagic tendency or other hereditary taint, was admitted into the Seraphim Hospital of Stockholm, January 16th, 1851, of good complexion, healthy looking, and well built. Catamenia appeared without abnormal features at the age of fifteen; had never been ill, excepting convulsive fits in her infancy; there had been no remarkable tendency to hemorrhage, but whenever she had met with an injury the parts had cicatrized as in any other person. She went into service when nineteen years old, and was maltreated on the 4th August, 1850. She was severely buffeted, and struck about the head, in consequence of which she was much excited and seized with convulsions, during which she screamed and struck her head against the surrounding objects; she was insensible for about half an hour. On recovering herself she found that she had bled profusely from the head, without being able to find any lesion of continuity. She continued in a torpid state during the succeeding three days; she merely remembers that the hemorrhage persisted, and that blood also flowed from the eyes, the left ear, and that she vomited blood. She continued very feeble after this time, the hemorrhages recurring almost daily. They ceased after two months, when she recovered her health for a fortnight; without any cause, the hemorrhage then returned one night from the cranium, and at the same time she vomited coagulated blood. The hemorrhage from the cranium continued for a week, then stopped, and the patient was well for two months. After that, the hemorrhage recurred every eight or fourteen days from the cranium, eyelids, and left ear. When examined after her admission, no traces of a present or previous solution of continuity could be traced on the cranium; there was no trace of injury to the bones. The hemorrhagic attacks continued to occur on the slightest emotion, but without special symptoms, except on one occasion, when, at the commencement of copious hæmatemesis, the patient was seized with violent delirium, then lost consciousness, and remained for eight days in a state of profound torpor. She then woke up, and the two left extremities were slightly paralyzed, and their sensibility somewhat blunted. After the lapse of three weeks these symptoms had entirely disappeared.

In March, 1852, she is described as being anæmic, pale, somewhat emaciated, and depressed, but the functions otherwise in normal condition; the kidneys, liver, sexual, and other organs apparently healthy; emotion so directly influenced the occurrence of the hemorrhage, that the patient by entering into a dispute could generally produce it at will. When it took place, she felt so fatigued as to be forced to lie down; the hemorrhage occurred on each side of the coronal suture, on a space three centimetres by ten. The blood was seen to sweat out at the roots of the hairs, first forming a red point, which gradually augmented to a drop which coalesced with others; if wiped off, the surface would soon be again covered with blood; its colour was that of arterial blood. Examined by a lens, no lesion could be detected, but the blood could be seen issuing from the hair follicle; the root of the hair was not diseased. The hemorrhage lasted from a few hours to two or three days; the skin of the bleeding part was not tumefied, but slightly tender, and its temperature elevated. The attack was generally preceded for one, two, or three days, by a sense of weight on the head and vertigo, with a feeling of heat and pulsation at the spot immediately before the bleeding occurred. Hæmatemesis and bleeding at the left ear were only occasional concomitants of the attacks; but the former was always accompanied by stupor, alternating with delirium.

The treatment, which consisted in the administration of tonics and astringents of all kinds, with nutritious diet, only caused temporary arrests of the hemorrhage. Strange to say, that in spite of the peculiar tendency to hemorrhage from certain parts, there was no predisposition to it from others, for contusions and solutions of continuity were not followed by unusual hemorrhage. On the application of local astringents to the head, such violent symptoms of cerebral congestion were manifested as to render venesection necessary.

All treatment failing, the patient was sent home in the same state in which she was admitted. The details of this interesting case are followed by an analysis of the theories applicable to the hemorrhagic tendency, and Professor Huss arrives at the conclusion that it is due to spasmodic contraction of the veins passing from the capillary network of the parts, in which this form of hemorrhage was manifested.—*Brit. and For. Med.-Chirurg. Review,* Oct., 1857, from *Archives Gén.*, August, 1857.

22. *On some of the Prevalent Errors in relation to the Predisposition to Hysteria.*—M. Briquet believes that most writers have been indebted more to their imagination than to the observation of facts for the pictures they have drawn of this disease. It has been attributed, by most of them, either to unsatisfied sexual desires or to excessive excitement of the uterus and its appendages, and a fanciful etiology to correspond has been invented. The object of this paper is to show that these and other preconceived ideas have no solid foundation in fact.

1. The *hysterical constitution*, about which so many positive assertions have been made, has, in fact, no existence, the affection occurring in women having the most opposite external appearances. The author examined 425 cases of hysteria in this point of view; of these, as regards height, 127 were tall, 168 medium size, and 106 short; as to strength, 99 were strong, 36 medium, and 26 weak; as to flesh, 194 were stout, 106 medium, and 92 thin and spare; as to colour, 220 were fair, and 164 dark, 27 having the hair light, 39 black, 177 light chestnut, and 188 deep chestnut. In 168 the face was pale or brownish, and in 174 fresh coloured. Thus it will be seen these were the ordinary varieties met with among women in general.

2. The *temperament* is also various enough. The following is the classification M. Briquet made of 383 cases. In 143, it was lymphatico-sanguineous, in 125 lymphatic, in 91 nervous or lymphatico-nervous, in 12 bilious, and in 11 sanguineous. These are evidently very much the proportions that are found in females of from 15 to 30, part inhabitants of the country, and part of the towns, as was the case with these. At all events, there is no temperament that can properly be called hysterical.

3. *Moral Disposition.*—That which is not discoverable in the physical constitution of hysterical females is, however, very evident in their moral disposition. So much is this the case that, of 430 cases occurring to the author, not more than 20, at the utmost, have not manifested it. The characteristic of this is marked *impressionability*, foreshadowed in childhood by great timidity, excessive susceptibility to blame, and a disposition to shed tears easily.

4. *Mode of Life.*—Another of the axioms that has been laid down as undoubted, is that hysteria is the prerogative of the wealthy and luxurious, and that poverty is a security against its occurrence. It is a complete error: the common people being the subjects of hysteria in almost a double proportion to the other classes. At a particular epoch, M. Briquet visited all the female patients in the medical and surgical wards of La Charité, with the exception of those suffering from epilepsy, apoplexy, insanity, or delirium. The number amounted to 203, and of these 65 were hysterical (38 with convulsive paroxysms), 49 were impressionable, and 89 only were neither hysterical nor impressionable. Thus, among the common people, there was 1 woman in 5 who had hysterical paroxysms, and 3 out of every 8 were the subjects of hysteria. So far from being exaggerated, the statement is rather below the truth. But where is the practitioner who meets with 3 cases of hysteria among 8 of his private patients? According to the experience of many M. Briquet has consulted upon the subject, there is about 1 in 8 or 10 in the easy classes of society, not alluding to the very highest. The charms and simplicity of a country life, too, have been sufficiently praised, and nervous diseases have been said to be the almost exclusive affliction of civic life. M. Forget, in 1847, somewhat startled this belief by showing how frequently hysteria occurs among the simple Alsatian peasantry. M. Briquet has obtained cognizance of the place of abode, and of early education, in 324 cases of hysteria, and of these, 168 were town-born and bred, and 156 from the country, the majority of these latter having, in childhood, laboured in the fields. In the case of 42 of these country girls, their mothers had been hysterical, 29 suffering from paroxysmal attacks. Professor Lebert, of Zurich, also assures the author that hysteria is just as often seen in the poverty-stricken cantons of Switzerland as in the most flourishing ones. A too tender and luxurious education has been assigned as a predisposing cause; but of 81 cases of hysteria occurring before the age of puberty, in 21 the harsh treatment they had been subjected to was the principal cause of the disease. A third portion of the author's collection of cases had been

submitted to ill-treatment or privation during childhood. In place of a tender education being assigned as a predisposing cause, it would be more just to thus stigmatize a harsh one.

5. *Continence* has been stated by many authors as an unnatural condition, predisposing to hysteria; but when it is remembered that the majority of cases occur between 12 and 20, we naturally ask at what age it becomes unnatural, as also for the explanation of the occurrence of the disease in 86 children under 11 years of age. Various authors since the time of Galen have deplored the fate of widows, as the necessary victims of hysteria: but, in point of fact, their solicitude has been little needed, inasmuch as among 375 cases collected by Landovzy, only 12 of the subjects were widows, as were only 14 in the author's own 430 cases, *i. e.*, 26 in 800 cases, or 1 in 30. Of the author's 14 cases, too, in 6 the hysteria appeared on the day of the husband's death, and in 4 during the first month after it, and should surely, with more probability, be referred to moral emotion. Hysteria has been said to be, on the one hand, common among nuns, and, on the other, rare among women who give free vent to their sexual desire. But, in point of fact, it is rare in convents, and is chiefly found in those in which there is great fasting and maceration. The reverse position so strongly maintained by authors may also be disposed of. Thus, of 300 hysterical females, above the age of 15, 139 were married or kept women, and among them had 367 children, not counting miscarriages. Among the 161 remaining, very few resigned themselves to continence. At the Lourcine, where syphilitic work-women and servants repair, among 424 patients, 169 were hysterical. As to prostitutes, of 197 applying to St. Lazare, on account of syphilis, 106 were hysterical, 28 very impressionable, and 65 neither hysterical nor impressionable. It results, from all this, that continent women are rarely hysterical; those who do not observe continence are frequently the subjects of hysteria; while those who pursue the extreme of incontinence are the most liable of all. The reason is obvious. Among these different classes of women, the first lead peaceable lives, the second have much to go through, while the last are a prey to frequent and violent emotions. Next, we may consider the effects of marriage on hysterical women, which, to judge from the statements made, have been truly remarkable. But, among M. Landovzy's and the author's 800 cases, in only 29 instances did decided advantage follow marriage, notwithstanding the complex character of the modification ensuing upon this state.

6. *Menstruation and Affections of the Uterus.*—This class of influences has been raised to the highest rank by those writers who are determined at placing the seat of hysteria in the uterus. 1. This has been supported by the supposed effects of normal or abnormal conditions of the menstruation. From the author's observations, however, made on 411 hysterical women, in but 136 had there been any derangement of the menses. Of 237 deliveries of hysterical women, in but 12 were there any convulsive paroxysms, some of which, too, might have been examples of eclampsia. 2. According to authors, it is common to observe hysteria in affections of the uterus. Now these diseases are exceedingly common, and the connection ought to be easily demonstrable. But this is not the case, for Landovzy, and other partisans of the opinion, are able to collect but some 40 cases of affections of the genital organs giving rise to hysteria: few enough as compared with the thousands of cases daily occurring. Practitioners, moreover, having much to do with the various female diseases, entirely deny such connection.—*Med. Times and Gaz.*, Oct. 31, 1857, from *Union Médicale*, Nos. 36, 39, 40.

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23. *Asphyxia of Submersion.*—Mr. A. T. H. Waters, from a series of experiments instituted with the view of investigating the two following questions—1st. How long the heart continues to beat in asphyxia produced by submersion; 2d. What effect the hot bath produces on an animal asphyxiated by submersion—arrives at the following conclusions:—

1. That in dogs and rabbits, when asphyxiated by submersion, the ventricles of the heart do not, as a rule, cease to contract "in a few minutes after the cessation of the functions of animal life;" but that in many instances their action continues for a very considerable period, and that in all probability the same

remark applies to man, and serves to explain how recovery has taken place after lengthened submersion.

2. That the effects of the hot bath are, to produce great congestion of the lungs, and a tendency to coagulate in the blood; its use becomes thus *directly* prejudicial; that it does not excite respiratory efforts, and prevents artificial respiration being properly carried out; and it becomes thus *indirectly* prejudicial.

With reference to the treatment of asphyxia, from whatever cause, all our efforts should be made to excite respiratory movements, and if these movements can be produced before the heart has ceased to beat, there is great probability of animation being restored; and even should the action of the heart have ceased, it is *possible* that by re-exciting respiration we may reproduce the circulation.

In attempting to produce artificial respiration, the best method is that recommended by Marshall Hall. Experiments on the dead body, and numerous instances of recovery from asphyxia attest its value, and prove it to be the most simple and efficacious means we know of. If artificial respiration be attempted when the body is supine, the tongue should be drawn forwards and kept so; this has not been sufficiently attended to.

The rules for restoring suspended animation recommended by the Humane Societies are defective. Their object is to restore circulation and warmth by means of the hot bath and hot air, neglecting, or only imperfectly carrying out, artificial respiration, on which alone safety depends. Moreover, the directions involve very serious loss of time. Few, if any, instances are recorded by these societies in which animation has been restored by the means recommended after a submersion of more than five minutes—a fact not to be wondered at when we consider what these means are.—*Liverpool Medico-Chirurgical Journal*, July, 1857.

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24. *Asiatic Cholera and its Prevention.* By Henry McCormac, M. D.—As physician to the Belfast Cholera Hospital, I had unusual experience in the treatment of Asiatic cholera. During the earlier outbreaks of this malady, opium and calomel were among the remedies most confided in. During the more recent outbursts, however, a new and additional remedy of great efficacy was resorted to. This remedy consisted of the dilute acids, any of them. Use and convenience gave the preference to dilute sulphuric acid, and to this dilute acid, more or less combined with opiates, I habitually restricted myself. The name of the person who introduced this remedy, like that of many another benefactor of his species, is unknown. The elixir of vitriol, which is merely sulphuric acid diluted with spirit, and the addition of a little aromatic is, in respect of cholera, in very many cases, literally and truly the elixir of life. Twenty drops, in a little water, may be taken every time the bowels are affected, also every two hours, for some hours after. But dilute sulphuric acid—that is to say, sulphuric acid one part, water seven parts, has precisely the same medicinal properties. Here, thirty drops in a little water, will be an expedient dose. To children, two drops for each year of the child's life may be given. Otherwise the mode of exhibition is the same.

I now come to another feature in respect to the efficacy of dilute sulphuric acid. I find that it possesses preventive, as well as curative properties. On the occasion of the outbreak of cholera in the Belfast District Lunatic Asylum, and after many deaths had ensued, I put the whole establishment on a prophylatic or preventive regimen. I added dilute sulphuric acid, in the proportion of half an ounce of dilute sulphuric acid to twelve ounces of water. Of this mixture I caused one tablespoonful, further diluted with a little water, to be swallowed each morning by every inmate. Very soon after, the cholera had completely disappeared. There is here the alternative of supposing that the disease spontaneously vanished, or that the dilute sulphuric acid had acted as a prophylactic. I myself prefer the latter conclusion. It is reasonable to conclude that a substance which possesses the property of constipating the bowels, should be adverse to the propagation of cholera. Now, dilute sulphuric acid possesses this property. It is also conformable to the efficacy of prophylactic measures generally, though greatly exceeding the efficacy of most in the prevention of disease. Sulphuric acid is as cheap as it is effective. A pound of strong sulphuric acid, costing one penny, will make seven pounds of dilute sulphuric acid, which, further diluted, would furnish a prophylactic draught to the whole of a regiment. And this brings me to the object and intent of these remarks. They are intended to serve our suffering countrymen in India, engaged with a murderous enemy, and assailed by cholera, equally murderous. It is of great moment to cure disease, but it is yet more momentous to prevent it. I, therefore, have recourse to the wings of the press in order to disseminate a suggestion, which, if acted upon, I feel assured is calculated to avert many a pang, and in the East, as well as elsewhere, rescue lives of priceless value.

25. *Nature, Causes, Statistics, and Treatment of Erysipelas.*—The *Midland Quarterly Journal* for May last, contains a highly interesting paper on this subject by Peter Hinckes Bird, F. R. C. S. The following are his conclusions:—

1. Erysipelas is merely an example on the skin of that diffuse inflammation which, in other tissues, constitutes diffuse inflammation of the mucous membrane, diffuse phlebitis, puerperal fever—all of which have a common origin, a poison in the blood, are infectious and contagious, and may mutually produce each other.
2. The term erysipelas should be confined to diffuse inflammation of the skin and subcutaneous cellular tissue.
3. Erysipelas is best treated by stimulants and support, and when complicated with inflammation of the subcutaneous cellular tissue, by early incisions which should extend to the depth of the disease.

26. *Action of Cod-liver Oil in Chest Diseases.*—Dr. E. Smith read a paper on this subject to the Medical Society of London (Oct. 31, 1857). The object of the paper was to show that, whilst cod-liver oil is a valuable remedy, it acts simply as a fat with certain physical qualities, and may be, and ought to be, supplanted by the ordinary fats used as food.

He first considered the chemical constitution of the oil, and then the state of system existing in phthisis, and particularly entered into an inquiry which he had instituted upon 500 cases as to the appetite for the various fats in food, and the appetite for, and effects of, the oil. He found that there was a diminished appetite for fat in phthisis, but that in no case was the dislike absolute; and in all some kinds of fat could be taken when others were rejected. Thus, fat meat was taken by more than half of the patients, and bacon fat by two-thirds; whilst suet in puddings, butter, and milk, were taken by more than nine-tenths of the whole. Afterwards, he stated the result of the effect of cod-liver oil upon 150 in-patients, and proved that in nearly half of them the oil was rejected or of no real service. Of 83 who reported themselves benefited, by far the larger proportion referred the good effect to improved assimilation; whilst of 67 who were unable to continue its use, or who were not benefited, the ill effect was referred to sickness and other circumstances connected with the first acts of digestion. After thus showing the degree of good and harm resulting from the oil, and the degree of appetite for, and dislike of, fat of various kinds in food, he proved that in the large majority of cases there was an appetite for fats when oil did good, and the contrary when it did harm, but this was not universal; and he also proved that in the very cases in which the oil was rejected there was always appetite for some kind of fat food, and in some cases even for the fat of meat. Hence he proved that there was no ground for the assertion that the oil was more easily digested and assimilated than some of the natural fats in food. The inquiry and medical testimony now prove that cod-oil acts beneficially as a nutrient; and he affirmed, from special experience, that the oil has no advantage over the fats in food, provided an increased quantity be taken of such of the nutrient fats as the patient can eat. Hence he urged the profession to distinguish properly between food and physic; and, if the oil is administered as a nutrient, to inform the patient that it is given as food, or, as he preferred, to direct them to increase the nutrient fats in proper quantities and of a suitable kind, and to administer other articles as medicine.

The following were the author's conclusions:—

That neither cod oil nor fat of any kind removes phthisis.

That the cases of arrest of the disease are very few.

That commonly the disease progresses, and is as fatal now as it was before the oil came into general use.

That in about half of the cases the rate of progress is retarded.

That the patient may be both stronger and stouter, and yet the disease quietly progress.

That when the oil disagrees, it is chiefly from its influence upon the digestive organs.

That when it agrees, it is generally by improving nutrition; but that in many cases it is believed by the patient to have a local influence.

That this local influence is most important in the pharynx and other parts of the mucous tract.

That it acts almost entirely as a fat, and supplies a defect in the system.

That it has no advantage over fats used in food, and may, like some of them, be taken and rejected.

That there is a large class in whom it is not beneficial, and it should be used with discrimination.

That it is our duty and our interest to dissociate food and physic.

Lastly, that it leaves the essence of the disease untouched; but that the great good which it often does temporarily, proves the importance of fat in the animal economy.

He showed how much more frequently there is appetite for fat in bronchitis than in phthisis and mere debility, and particularly in liver diseases; but he deferred the discussion of the question, and of the use of fats in general, to another occasion. He urged upon the profession the impropriety of poor-law surgeons being compelled to supply the oil, when the guardians ought to give fat in food; and of the medical officers of hospitals and dispensaries taxing the overburdened funds to supply so expensive a food.

Dr. Payne Cotton remarked that the opinions of the author respecting the virtues of cod-liver oil were not those entertained by the other physicians of the Hospital for Consumption. He himself was an advocate for its employment in all cases. He did not pretend to explain why it did good, but that it was of benefit was sufficiently evident by its effects. Under its use a great number of patients improved, and though it failed in some instances, it did not do so so frequently as Dr. Smith stated. He could only say he had undiminished confidence in its effects. He had tried other oils with a view to determine whether they could be substituted for it; but they were all inferior to it. Amongst those he had thus tested were train oil, neat's-foot, almond, olive, and cocoanut oil. That which most nearly resembled the cod-liver oil was the neat's-foot. When cod-liver oil was given in the earlier stages of phthisis, in many cases it arrested and retarded the disease, and prolonged the life of the patient.

Dr. Cotton had employed glycerine, but it did not act beneficially.

Dr. Semple considered, from the experience he had had of the use of cod-liver oil, that it was of signal benefit in cases of phthisis. In many cases it prolonged life, and added to the comfort of the patient: in some instances, when given in the early stages of the disease, it arrested the complaint and prolonged life to its average duration. He had witnessed remarkable good effects from its administration to children affected with various strumous diseases.—*Lancet*, Nov. 7, 1857.

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27. *Injections of the Bronchi in Pulmonary Diseases.*—Dr. J. H. Bennett, Prof. of Clin. Med. in Univ. of Edinb., in a short paper in the *Edinburgh Medical Journal* (Nov. 1857) makes the following statement:—

"I have introduced the catheter publicly in the clinical wards of the Royal Infirmary, in seven patients. Of these five were affected with phthisis in various stages—one had chronic laryngitis with bronchitis, and one chronic bronchitis, with severe paroxysms of asthma. In several other cases in which I attempted to pass the tube, it was found to be impossible—in some because the epiglottis could not be fairly exposed, and in others on account of the irritability of the fauces and too ready irritation of cough from pressure of the spatula.

"My experience of this treatment is as yet too limited to permit my saying anything of its permanent effects. In the case of bronchitis with asthma—a female, aged 24—I have now injected the lungs eleven times, at first throwing in ʒij of a solution of nitrate of silver, of the strength of ʒss of the distilled salt to ℥j of crystallized water, and latterly I have thrown in ℥ss of a solution of the strength of ℈ij to ℥j. She declares that no remedy has had such powerful effect in lessening the cough, diminishing the expectoration, or delaying the asthmatic paroxysms. She breathes and blows through the tube, when inserted four inches below the larynx, and I have been surprised at the circumstance of the injections not being followed by the slightest irritation whatever, but rather by a pleasant feeling of warmth in the chest (some have experienced a sensation of coolness), followed by ease to the cough, and a check for a time to all expectoration."

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28. *Treatment of Phthisical Vomiting by Local Anæsthesia.*—Mr. Atcherley, disappointed in the effect of the orthodox remedies—as hydrocyanic acid, opium, bismuth, gallic acid, creasote, nitrate of silver, counter irritation, &c. &c.—for this condition, states (*Liverpool Medico-Chirurgical Journal*, July, 1857) that he was induced to try Dr. Arnott's method of producing local anæsthesia in two cases with decided success. He directed "pounded ice and common salt to be mixed together in the proportions used to produce anæsthesia. This poultice was placed in a thin muslin bag and put upon the epigastrium, and retained there until the skin became white and insensible; it was then removed, and its place supplied by lint, dipped in cold water, to prevent too sudden a reaction. As I had always witnessed great benefit from the internal administration of chloroform in previous cases of a similar nature, I directed ten minims to be dissolved in two teaspoonfuls of brandy, with a sufficient quantity of iced water to make a draught, to be taken whenever the feeling of nausea came on. I gradually increase the quantity of chloroform if the smaller doses are insufficient; but I have seldom had occasion to exceed sixteen or eighteen minims. In this case it had not such an extended trial as its valuable sedative powers entitle it to. I have generally found it to allay the sickness for a time, even in the most urgent cases; and when given in the remission of the paroxysms, it relieves the feeling of exhaustion and overwhelming depression consequent on the long-continued retching, more speedily than any other restorative. Still, in this patient, no permanent suspension of the vomiting took place until after the application of the ice poultice. No food of any kind was given till a clear truce of four or five days had been established, the strength being maintained by enemata of beef tea, jelly, and wine.

"The effect of this treatment was most remarkable: the stomach, which had rejected everything in the shape of food for the space of ten days, accompanied with violent retching, sometimes of two hours continuance, became suddenly tranquillized. The vomiting ceased for a whole day and night immediately after the first application of the ice poultice, although it returned to some extent on the following morning, when the same means were employed with the same beneficial results. The patient has since had no return of sickness, is now enjoying a good animal diet, with beer or wine, as inclination dictates, and has been able to resume the use of cod-liver oil."

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29. *Chloroform in Intermittent Fever.*—M. Delioux, a professor in the French Naval Medical School, has long been engaged in searching for succedanea for quinine. Having observed that when he administered chloroform to phthisical patients, that it not only relieved the pain in the chest and cough, but also moderated the fever and nocturnal sweats, he conceived it might possess febrifuge powers also; and the result of numerous trials is the ample verification of his supposition. He forms a syrup, by adding 5 parts of chloroform to 100 of simple syrup, of which he gives from ʒj to ʒiij in a mixture, at the same

intervals at which quinine would be given.—*Med. Times and Gaz.*, Nov. 21, 1857, from *Union Méd.*, No. 129.

30. *Belladonna in Incontinence of Urine.*—A number of cases have within the last few years been reported, showing the beneficial effects of belladonna in incontinence of urine; but the following, reported in the *British Med. Journ.* (Sept. 5, 1857), is the most remarkable we have met with.

Elizabeth S., aged 4 years 9 months, was admitted under the care of Mr. Pollock in November, 1856, on account of incontinence of urine. It appeared that she had never been able to retain water since the time of her birth. The urine continually dribbled over her clothes, both by night and day, and she was, besides, teased with constant desire to pass it. On examination, nothing unnatural was discovered in the urine, except that it was extremely limpid. It was slightly acid, and free from albumen or any other morbid product.

She was ordered purgative medicine (Pulv. scammon cum cal. gr. iv alt. noct.), and saline medicine, with bicarbonate of potash. This treatment was continued during the month of December without benefit. On December 30th steel was tried (tinct. ferri sesquichlor. ♏vi ter die), with blister on the loins; but after a full trial of this treatment for six weeks, it was given up, as no good was effected. On February 10th, she was ordered extract of belladonna one-twenty-fourth of a grain twice a day; and this was increased on March 3d to one-sixteenth of a grain three times a day. She now began to improve slightly, so as to pass a few hours during the day without making water. On March 17th, the quantity of the belladonna was increased to one-twelfth of a grain three times a day. She persevered in this treatment to May 26th, by which time she had so far improved as to pass three or four nights consecutively without passing water. The belladonna treatment was now combined with steel, and she has ever since been steadily improving, and is now quite well, with the precaution of waking her late at night to make water, and then giving her a dose of the medicine. Still, however, if she suspends the belladonna the irritability of the bladder again shows itself.

## SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

31. *Embolic Apoplexy from Detachment of Fibrinous Coagula in an Aneurism of the Carotid.* By Dr. Fr. Esmarch.—Captain C. H., from Sweden, consulted a medical friend of Professor Esmarch concerning an attack of angina tonsillaris, and at the same time drew his attention to a tumour of the *left* side of his neck which had formed suddenly three years previously, without appreciable causes, and had now attained the size of a hen's egg. It occupied the upper triangle of the neck, was slightly diminished by pressure, and communicated a distinct thrill to the touch. It was at once diagnosed as an aneurism of the common carotid. On repeating the examination a few days later, and exerting pressure upon the tumour for the purpose of reducing it, the patient suddenly fell back with symptoms of apoplexy. He was at once bled and conveyed to the hospital, where he was placed under the care of Dr. Esmarch, on the 8th of May, 1855.

The patient was well built and robust; in a state of coma, from which he could only be roused momentarily; the pulse was moderately full, heart normal. The whole *right* side of the face was paralyzed, the right cheek was distended in expiration; there were spasmodic movements in the facial muscles of the left side. The pupils reacted to the stimulus of light. The tongue, which was much furred, pointed to the left. Respiration was stertorous. The thoracic muscles and diaphragm acted well, but only the left abdominal muscles moved in respiration. Both right extremities were completely paralyzed.

Deglutition, defecation, and micturition were normal. The tumour pulsated isochronously with the carotids, but presented no murmurs.

Professor Esmarch diagnosed the detachment of fibrin from the aneurismal sac, and a consequent obliteration of the left cerebral carotid. Ice was applied to the head, sinapisms to the legs, and an enema with vinegar was administered. Some improvement ensued; the paralytic symptoms diminished, and the patient was able to converse with a countryman; a relapse, however, followed, and on the 11th of May profound coma ensued; the pulse was very quick, the skin cool, the complexion livid, the right pupil was somewhat drawn out transversely, but both pupils continued to react to the light; both lips were distended by expiration; urine was passed involuntarily. The liver increased, the pulse became too quick to be counted, respiration slow, and accompanied by screams in inspiration; and death ensued at midnight.

The cadaveric examination was made the day after by Professor Weber.

The aneurism had a spindle-shaped form, and commenced about four centimetres above its issue from the aorta; the external and internal carotids quitted the upper end of the aneurism, preserving their normal size. The internal jugular vein was pushed outwards, the vagus lay between the vein and the aneurism and was unaltered, but the descending branch of the hypoglossus was adherent to the tumour, and much altered in appearance. The whole internal surface of the carotid from its origin was in a state of atheromatous degeneration, and contained enormous chalky formations; both below and above, a portion of the inner coat of the artery formed a projecting ridge in the aneurismal sac. The sac was partly lined with a smooth red membrane, partly with more or less firmly-attached, ragged, fibrinous coagula: much loose fibrin, irregularly interwoven, was also in the sac; a firm coagulum was drawn out of the internal carotid, which tore off from its continuation within the carotid foramen. There was no coagulum in the external carotid. Within the cranium there was found considerable hyperæmia of the vessels of the pia mater, a moderate effusion of serum under the arachnoid; the whole middle portion of the left hemisphere, including a part of the corpus callosum, was converted into a pulp of a grayish-yellow colour. Beneath the aquæductus Sylvii, in the mesial line of the pons Varolii, was a perfectly recent extravasation of blood of the size of a bean; a smaller one, a centimetre in front of the former, and in the vicinity several small capillary extravasations. Normal cerebral tissue could not be discovered in the softened portion; it consisted of granular matter and short fragments of broken-up fibres, with capillaries containing shrivelled corpuscles. In the extravasations at the pons, the blood corpuscles were unaltered. The cerebral carotid, the arteria fossa Sylvii, and the arteria ophthalmica, were completely blocked up with coagula of a dark-brown colour, inclosing numerous red and grayish-white plugs, which evidently were derived from the aneurism. Their identity was proved by the microscope. The thoracic viscera presented no marked disorganization, except that the ascending aorta exhibited extensive atheroma; the same was the case with most of the large arteries.

Professor Esmarch, in his concluding observations, dwells upon the danger of much manipulation of aneurismal tumours, as being liable to give rise to such consequences as those above described. He particularly discusses Mr. Fergusson's mode of treating aneurism of the subclavia, recently brought before the Medico-Chirurgical Society, which consists in forcing the coagula contained in the tumour into the axillary and brachial arteries.—*Brit. and For. Med.-Chirurg. Review*, October, 1857, from *Archiv. für Pathol. Anat. und Physiologie*, Bd. xi.

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32. *Case of Arterio-Venous Aneurism, which was treated by Ligature of both the Artery and the Vein.*—Mr. Moore communicated the following case of this to the Royal Medical and Chirurgical Society (Nov. 10, 1857).

A labourer, aged 60, was admitted into the Middlesex Hospital on September 30, 1857, pale and much depressed by loss of blood. Thirty-six years previously he had been bled in the left temporal artery, and he had ever since had a pulsating swelling in the site of the lancet-puncture. In the course of years it enlarged to the size of his fist; the pulsation continued, and could be stopped by pressure with his finger in the parotid space. He had no pain in the tumour till August last, when it enlarged still more. One month ago it burst, and he at once lost two quarts of blood. Hemorrhage recurred a fortnight ago, which greatly reduced him, and large "lumps of flesh" were removed from the aneurismal cavity. On his admission to the hospital, there was an ulcer in the left temple as large as a crown-piece; a clot of adherent blood near its anterior part; a large abscess above the ear, from which pus issued in a stream through the ulcer; and extensive œdema of the left half of the scalp. Moreover, a cluster of enormous tortuous, soft, pulsating vessels could be seen and felt above, below, beneath, and in front of the ulcer. There was no purring tremor in the veins of the scalp; but the left external jugular vein was greatly enlarged, and had a visible arterial pulsation, together with a continuous vibratile thrill. No other vessels were enlarged. The enlarged vessels being extremely thin, it was determined not to place a ligature upon them, and the temporal artery was sought for at the highest point at which it was presumed to be healthy. By means of a vertical incision over the parotid space, a pulsating vessel was reached, and a ligature passed under it. Pulsation ceased in the temporal vessels when the finger was pressed into the loop of the ligature, but continued after the knot was tied. Upon examination, the pulsation was found to continue only on the distal side of the ligature, and the tied vessel proved therefore to be the vein. The temporal artery, by communication with which the vein received its pulsation, was then found in a situation where it might have been compressed by the finger when introduced into the wound. Upon tying the artery, the pulsations in the temple and in the distal part of the vessel previously tied at once ceased. The pulsation and thrill of the external jugular vein disappeared, the wound contracted, the temple shrank, the abscess closed, and the man left the hospital on the 19th of October, convalescent, though still weak. The author briefly reviewed the effects of the treatment by compression and by ligature, which had been adopted in cases of permanently circumscribed arterio-venous aneurisms.

1. A cure had been obtained by the complete closure of either the artery or the vein at the site of the unnatural aperture.

2. The obliteration of one end only of either vessel had never proved successful, the disease continuing or gangrene of the limb ensuing if only the cardiac end of the artery were tied, whilst the closure of the distal orifice only of the vein had but moderated the symptoms of the disease.

3. There was reason to think that the operation just related would prove permanently successful, since all direct access and return of blood through the main vessels were cut off by the ligatures; and the orifice of communication, being beyond both ligatures, was reduced in importance to that of a passage between vessels whose circulation was only collateral.—*Med. Times and Gaz.*, Nov. 21, 1857.

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33. *Revision of the Doctrine of Dislocation.*—Prof. Roeser lays down the following maxims respecting dislocation, as illustrated by dislocations of the femur, derived from observations, inquiries, and experiments, continued over many years.

1. The essential obstacle to the reduction of a dislocation almost always consists, not in muscular contraction, but in the narrowness of the aperture in the capsular ligament; 2. The difficulty of reduction generally arises only from its not being at once possible to ascertain the direction and position of the luxated head in relation to the rent in the capsule. When these are found, the bone is either reduced of itself by muscular action, or a slight impulse, rotatory movement, &c., causes the head to slide in; 3. Much depends not only upon the size but upon the position and direction of the rents in the capsule; 4. The head of a dislocated bone is not, as a general rule, found in the primary position which was given to it by the force applied; but, under the influence of the flexion, adduction, &c., of the dislocated limb, immediately following, it assumes a secondary position; 5. The reduction-process must

have for object, first, to restore the dislocated bone to its primary position, and thence to effect its return; 6. The classification of the dislocations of every joint must be based upon the essential anatomico-mechanical points; and the symptomatic classification adopted by Malgaigne is as unscientific as it is impracticable; 7. The most common dislocation of the head of the femur is downwards, when it passes beneath the tendon of the *obturator internus;* 8. This dislocation is produced by violent flexion of the hip-joint, during slight rotation of the thigh inwards; 9. The dislocation downwards becomes in general converted during extension (with rotation inwards) into dislocation backwards, *luxatio ischiadica;* 10. By abduction it may be converted into a *luxatio obturatoria;* 11. For the reduction of all these cases in which the hole in the capsule exists below, strong flexion appears to be necessary, in order to bring the head of the bone into its primary position, opposite the rupture of the capsule; 12. The dislocation on to the *foramen ovale* appears to be a mere variation of the dislocation downwards; 13. In the *luxatio obturatoria* the head of the bone is placed beneath and behind the *obturator externus;* 14. Malgaigne's "perineal luxation" is only a slight modification of the *luxatio obturatoria;* 15. The dislocation forwards, between the *fossa ileo-pectinea* and the *psoas*, is produced by excessive extension with rotation outwards. A secondary displacement results from slight flexion. The reduction is brought about by extension and rotation inwards; 16. Luxation behind the *pectineus* is to be regarded as a mere modification of the *luxatio ileo-pectinea.* It is not to be considered as a *luxatio obturatoria;* 17. The extremely rare luxation on the outer side of the anterior inferior spine must be regarded as a modification of the *luxatio iliaca*, produced by violent rotation outwards; 18. The *luxatio iliaca* is the rarest of all the forms of dislocation, although it is commonly regarded as the most frequent. The majority of those cases that have been so termed, and a considerable portion of those cases so denominated by Malgaigne, are, in fact, examples of *luxatio ischiadica;* 19. The *luxatio iliaca* essentially arises from rotation inwards, with adduction and flexion of the limb. Its reduction is based upon rotation outwards.—*Brit. and For. Med.-Chirurg. Rev.*, Oct. 1857, from *Archiv für Physical. Heilk.*, 1857.

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34. *Luxation of the Os Coccygis.*—Dr. Roeser observes (*Froriep's Notizen*, 1857, Bd. II., No. 10) that in the few cases on record in which this bone has been dislocated, the luxation has been outwards or inwards, whereas in the present case it was lateral. A large, corpulent women, thirty-six years of age, while suddenly descending from a table on which she was standing, fell in a riding position across the back of a low wooden chair. Severe pain in the coccygeal region, which was much aggravated by attempting to sit, was the consequence, but she managed to get about for some hours. At last it became so severe that she was obliged to take to her bed, where she found she could neither move nor turn. After she had passed the night in this way, the author saw her, and found her with so changed a countenance, and such an immovability and partial stiffness of the body, as to give very much the appearance of approaching tetanus. Besides the severe pain in the coccygeal region, she complained of a painful, tense, dragging sensation, extending from below upwards towards the nape, stretching along the arms to the fingers, which were numbed. The slightest voluntary movement of the body, or of the head, to one side or the other, and still less sitting up in bed, could not be borne. The head was confused, and the intellect somewhat clouded. There was no unnatural sensation in the lower extremities, and the urine and feces were passed naturally. Upon examination, a small swelling was felt on the left side of the fissure of the buttocks, which proved to be the coccyx torn away from the sacrum, and carried towards the descending ramus of the left ischium. The end of the sacrum whence it had been displaced could be plainly felt. When a finger was introduced into the rectum, the exact nature of the displacement was still better ascertained; and when firm pressure was made downwards and to the right against the displaced bone, it suddenly resumed its normal position. The patient declared she immediately felt quite another being, the confusion of the head and painful sensation along the spine and

arms disappearing. At the end of the fifth day, no inconvenience beyond a slight burning pain near the sacrum remained.—*Brit. and For. Med.-Chirurg. Rev.*, Oct. 1857.

35. *On the Prevention of the Ill-consequences of Operations.*—Prof. Deroubaix, Surgeon to the St. Jean, Brussels, terminates a series of papers upon this subject with the following summary:—

1. If it is the duty of a surgeon to seek, by the improvement of his operative procedures, to obviate the immediate accidents of operations, the endeavour to discover the means of prevention of the secondary accidents, which are far more dangerous, is still more imperiously demanded at his hands. 2. Could the great surgical operations be rendered less dangerous in themselves, the intervention of surgery would be much more clearly and more frequently indicated in cases where the practitioner now often is obliged to remain a passive spectator of disorders which infallibly prove fatal. 3. The danger of great operations is not due to the size of the surfaces concerned, but to the number and volume of the veins divided. 4. When the division of veins proves mischievous, it does so by giving rise, through a mechanism the nature of which it is not always easy to appreciate, to the production of purulent infection, one of the most fearful consequences of traumatic lesions. The great danger and extreme frequency of this complication justify the efforts made for its prevention or removal. 5. There are two directions, both perhaps equally good, by following which we may succeed in rendering pyæmia of much less frequent occurrence. The first of these consists in improving and rendering less uncertain the process of healing by the first intention; and the second in so modifying the divided surfaces as to convert them into a lesion of continuity of far less dangerous character. 6. Metallic caustics, at least in the immense majority of cases, do not give rise to purulent infection; but they are not applicable to certain operations—as, *e. g.*, amputations. 7. It is rational, then, when seeking for substitutive or modificatory means for the prevention of pyæmia, to resort to such as most resemble caustics in their mode of action, and yet are exempt from the disadvantages of these therapeutical agents. 8. The tincture of iodine would seem to possess properties enabling it to fulfil these indications, seeing the deep-seated modification it impresses on the tissues, and the plastic effects it gives rise to. It does not act upon the ligatures, and therefore does not give rise to the danger of secondary hemorrhage. When it is applied to bleeding surfaces after an operation, it induces a general hyposthenic effect of short duration, and a local hyposthenic effect, which imparts peculiar characteristics to the granulations and cicatrization. 9. The most remarkable results of this hyposthenization are, the much less indolence of the wound, the slight amount of suppuration, the notable diminution of the general reaction, and the maintenance of a condition approaching that of health. These phenomena offer no impediment to rapid cicatrization. 10. The discharge from the surface of the wound is considerably diminished as a consequence of the application of the tincture; but this does not prevent arterial hemorrhage, or the loss of blood from the large veins. 11. The putridity of the wound becomes evidently diminished; and when the tincture is applied to the divided extremities of the veins, these become corrugated and narrowed, and then agglutinated. If phlebitis arises, it is obliterative and adhesive, not suppurating. 12. The application of the tincture to the sawn surface of the bones does not lead to necrosis. 13. The tincture imparts no preservative power against pyæmia when an open venous orifice, through which pus may be easily, so to say, mechanically introduced exists at any point of the surface. 14. In ordinary cases, even the tincture is no certain preventive of purulent infection. When, after it has been applied, we find the vicinity of the wound remaining very painful, we should suspect a commencement of phlebitis, and the course of the pain should be carefully inquired into. 15. It should be remarked that, as the general hyposthenization which results from the application of the tincture exhibits itself in symptoms, comparable to a certain point to those produced by chloroform, prudence is required in the simultaneous or successive employment of the two substances. Perhaps this is the principal defect in the iodine.

16. The injection of the tincture into the veins is immediately fatal. It induces an entirely peculiar coagulation of the blood, incapable of being confounded with any other pathological or spontaneous coagulation. 17. Nevertheless, this medicinal substance cannot, when applied to a bleeding surface, be carried in substance into the torrent of the circulation, unless, indeed, venous orifices be maintained open by adhesions. It is absorbed in the state of an alkaline iodide, and may be found in such a state of combination in the blood and urine. The amount ordinarily absorbed exerts no ill effect upon the economy.—*Brit. and For. Med.-Chirurg. Rev.*, Oct. 1857, from *Presse Méd. Belge*, 1857, Nos. 17–24.

36. *Amputation at the Knee-Joint, leaving the Articular Surface entire.*—Mr. Lane communicated to the Western Medical and Surgical Society (Oct. 23, 1857) some remarks on this operation. He advocated its adoption in all cases where the disease was confined to below the joint in preference to the more common practice of removing the femur at its lower third. Mr. Lane stated that he had, for the first time in England, performed this operation about five weeks ago, and exhibited the subject to the members. It had been performed in Glasgow in 1847 once, and in the Crimea seven times, in three of which the patient recovered. It had been performed eighteen times in America, with five deaths; and twenty-eight times on the Continent, with twelve deaths; giving a percentage of 31 deaths, whilst that from amputation of the thigh was about 43½: hence the recommendation of the present plan. He described the operation, recommending a large anterior flap to be made in front of the joint down to the insertion of the ligamentum patella, which was to be turned up and the knife carried through the joint, and a small posterior flap to be then made, so that in healing it would draw the anterior flap over the articular surface, the cicatrix being then behind the joint. The advantages of this plan were apparent in the decreased mortality, and in the after usefulness which would arise from the stump being capable of bearing the pressure of the body better than does the divided femur. Mr. Syme and Mr. Fergusson had recommended a similar operation, but it differed in the removal of the articular surface, and in the recommendation to make a large posterior flap, which was objectionable on account of the tissues of the calf being unaccustomed to pressure and unfit for the proposed work.—*Lancet*, Nov. 7, 1857.

37. *Results of the Operation of Tracheotomy performed for Croup at the Children's Hospital, Paris, during the Year* 1856.—The *Bulletin de Thérapeutique* (May 30, 1857) contains an extremely instructive table respecting tracheotomy in croup, taken from the thesis of M. André, late house-physician (interne) of the Children's Hospital:—

| Age. | No. of Patients. | Deaths. | | Recoveries. | |
|---|---|---|---|---|---|
| | | Boys. | Girls. | Boys. | Girls. |
| From 15 months to 2 years | 6 | 2 | 4 | ... | ... |
| " 2 years to 3 years | 9 | 4 | 3 | 2 | ... |
| " 3 " 4 " | 13 | 5 | 4 | 4 | ... |
| " 4 " 5 " | 11 | 6 | 3 | 1 | 1 |
| " 5 " 6 " | 6 | 3 | 1 | 1 | 1 |
| " 6 " 6½ " | 3 | 1 | 1 | ... | 1 |
| " 7 years | 2 | ... | 1 | ... | 1 |
| " 8 " | 2 | ... | 1 | 1 | ... |
| " 9 " | 1 | ... | ... | 1 | ... |
| " 9½ " | 1 | ... | ... | ... | 1 |

From this table it appears that many successful cases of tracheotomy have been observed, as nearly one-third of the patients recovered. The most notable success has been obtained with children from nine to nine years and a half old, and then with those children who were from five to six years old. The least satisfactory results were observed from fifteen months to two years, for here we have six operations and six deaths. All the children under two years are to be found in the column of deaths; and all those who died, except two, were just a little more than two years old. M. André thinks that these facts may be explained by the greater amount of resistance with the older children, both as regards the disease and the operation. He also conceives that debilitating means, as leeches, blisters, &c., should be sparingly used, so as to husband the strength for tracheotomy.

38. *Treatment of Hemorrhoids.*—Dr. Van Holsbeek recommends the following formula as of remarkable efficacy in the various forms of hemorrhoids, providing that these are uncomplicated: ℞. Sulphuri loti, sacchari canarini, of each ℥j; ext. strychn. nux vom., gr. vj. To be mixed with a sufficient quantity of tragacanth so as to form twenty-four lozenges. Of these two are to be taken the first day, the number being increased by one every day, until six are taken daily. The patient is then to keep at that number during four days, when he is to diminish it gradually until only two are again taken daily. If a radical cure is not by this time effected, he must follow the same course again. The amendment is, however, usually so rapid that the treatment at farthest lasts a week.—*Brit. and For. Med.-Chirurg. Rev.*, Oct. 1857, from *Presse Méd. Belge*, 1857, No. 22.

39. *The Present State of Surgical Science in reference to Cancer and its Treatment.*—Mr. Hird read before the Medical Society of London (Oct. 10th) a paper on this subject. It was not his intention, the author observed, to enter into a detailed report of individual cases treated by the escharotic applications which of late have been revived by many members of the profession besides himself, but to inquire whether recent experience has shown that we can control the progress of this destructive disease with more certainty, and on sounder surgical principles, than our predecessors were enabled to do. The questions whether carcinoma ever originates and continues as a local disease; whether it ever spontaneously disappears without the interference of art; whether a tumour, originally innocent in its character, is susceptible of cancerous transformation; whether it possesses anatomical, chemical, physiological, and pathological characters, by which we can infallibly distinguish it from other growths, which we are unable to do by the senses of sight and touch; whether, even supposing the constitution to be affected, the ablation of the local disease may not arrest or retard its fatal course; whether removal ever accelerates it by bringing into activity a force which previously had lain dormant in the system; whether we possess remedial agents, by which we can retard or resolve the disease, he considers, embrace subjects of vital consequence, on the solution of which the life of the patient, the truths of science, and the reputation of the surgeon depend. In his observations on the forms of cancer, the author included the epithelial variety along with the encephaloid, scirrhus, and colloid, and objected to its removal from the cancerous group, although it has less tendency to contaminate the lymphatic glands and the system generally than the other three forms of cancer, and differs slightly in its histological elements. After briefly reviewing the important subjects embraced in the origin and development of cancer, in which the preceding questions were answered so far as the present state of science would admit, he proceeded to discuss the treatment. In this section the author dwelt on the means of arresting cancerous growths by medicinal agents, and contrasted the comparative advantages of removing the local disease by caustics and the knife. In reference to medicines, the author believed that if any remedy possessed a power of retarding the progress of the disease, it was arsenic, which he administered with cod-liver oil, and has not found the latter objectionable, on the ground of animal oils tending to encourage the fatty matters in the system, on which cancerous formations are supposed to feed. Arsenic as a preventive of secondary formations after removal of the local disease, he (Mr. Hird) had great confidence in, and in combination with iodine it was strongly recommended by the late Dr. Anthony Todd Thompson; Dr. Copland and the late Mr. Hill witnessed great advantages from its use. The great question of

removal by the knife or by caustics concluded the paper. Caustics the author had found more tedious in their operation and more painful than the knife, and occasionally failed to enucleate the tumour, and he has no faith in a supposed physiological action on the constitution through the part treated, by which it has been stated, without evidence to justify the statement, and, in opposition to his own experience, the disposition to return after removal is less than when the part has been extirpated by the knife. He has seen six cases in which the disease returned after removal by caustics, and has read and heard of many more. Nevertheless, there are cases in which caustics offer greater advantages than the knife. In certain localities, and in particular conditions of the tumour, and where loss of blood, or the dread of a cutting operation, would greatly depress the patient. Early operation the author strongly advised, as affording the only hope from surgery in scirrhus, colloid, and epithelioma. In encephaloid he did not advise an operation.

40. *Escharotic Treatment of Cancer.* By James Syme, Prof. of Clin. Surg. in Univ. of Edinb.—The subject of cancer has been so mystified by the misrepresentations of unscrupulous adventurers, that any attempt to re-establish its treatment upon sound principles may seem a hopeless undertaking; but I nevertheless beg to offer the following observations, in the hope that they will still be of service where rapacity and credulity have not entirely superseded honesty and common sense. It is not surprising that the dread of cutting, and the bad success of operations, too frequently performed under unfavourable circumstances, should have predisposed to the ready reception of any new proposal for the remedy of a disease so formidable; and, accordingly, the employment of variously prepared caustics for this purpose has, during the last twenty or thirty years, afforded a fruitful field for quackery without and also within the profession. For, whatever may be the sentiments or laws of medical corporations, I shall always hold that the worst form of quackery is, not practising without a diploma, but using secret remedies, and pandering, by false pretences, to the capricious folly of credulous patients. It could hardly, however, have been anticipated that the medical officers of a metropolitan hospital would so far forget the dictates of professional honour as not only to harbour in their institution a secret cancer curer, but, by continuing to do so month after month, sanction the delusion that he possessed some beneficial means of treatment unknown to their brethren. Yet the surgeons of the Middlesex Hospital have exposed themselves to this serious charge. They can hardly deny the former part of it; and with regard to the latter, must either plead guilty or profess belief that the juice of *Sanguinaria Canadensis* possesses more active powers than the gilding of a pill. In their anxiety to escape from the horns of this painful dilemma, they now admit that "the vegetable ingredient is practically inert," that the caustic is an old one, and that there is nothing new in the practice of their *protégé* except daily making incisions and stuffing the wounds with escharotic paste—a proceeding utterly opposed to the established principles of surgery, and eminently calculated to produce the most disastrous consequences, but which, instead of indignantly condemning, they commend as deserving of general adoption, and as entitling its author to public gratitude. The hollow pretensions of secrecy having been thus indorsed and published with the authority of a metropolitan hospital, it is requisite for the protection of sufferers from cancer, that the principles of its proper treatment should, as far as possible, be no less extensively diffused.

It being admitted, by universal consent, that the various forms of disease comprehended under the titles of cancer and carcinoma are not remediable except through removal of the morbid part, the only room for question that remains in regard to their treatment is limited to the choice of means for this purpose. There can be no doubt that excision, if performed under chloroform, affords not only the most speedy and effectual, but also the least painful mode of extirpating the disease, so far as its extent can be recognized by sensible characters. On the other hand, it is alleged that through the use of caustic a more lasting protection may be obtained against the danger of relapse; and if such were really the case, there could be no hesitation in preferring the latter means. But, unfortunately, from being chiefly used empirically, they are supported by evidence of a very questionable character. For, in the first place, patients who confide their treatment to irregular practitioners, are naturally unwilling to admit that they have received no benefit or suffered damage from venturing upon this course. They are, consequently, very ready to be persuaded that good has been done, and when the expectations thus excited prove to be fallacious, no less slow to confess their disappointment. The wonderful histories of cures, therefore, so frequently put in circulation on the ground of such sanguine anticipations, are seldom counteracted by a knowledge of the issue, however disastrous it may have been. Thus, an impudent quack—the Middlesex surgeons call him a "gentleman"—industriously distributed penny puffs, red, green, and yellow, of which the most prominent feature was an affidavit sworn before the Lord Provost of Glasgow, by a man who had been an out patient at the hospital here, under my care, that he was cured by the said quack, although he was not so, and died soon afterwards of the disease. Now, this poor creature doubtless believed the assurance of that respectable person, and probably signed his declaration from the amiable motive of leading fellow-sufferers in a right direction; but having taken this unwary step, could not retrace it, when taught by sad experience that he had been miserably deceived.

Then, again, there are so many diseased conditions apt to be regarded as incurable, though not really so, that the most careful discrimination is required to prevent their successful treatment from being erroneously assumed as ground for belief in the curability of cancer. But the empirical practitioner is neither able nor willing to make such distinctions, and so far from endeavouring to dismiss the unfounded apprehensions of a patient, will always be anxious to cherish and increase them, in order to enhance the value of his pretended services. Thus, if a tumour of the breast, supposed to be carcinomatous, should be a serous cyst, requiring merely evacuation and irritation of the surface, or a fibrous growth removable without further disturbance of the gland, or a chronic abscess, or even nothing more than that simple engorgement and painful state so common in females whose health is out of order, the quack will not vary his practice, or scruple to make the unfortunate patient pass through all the horrors of a prolonged escharotic treatment. Indeed, I once saw a poor woman who had both of her breasts destroyed by caustic, although there was distinct evidence that neither of them had been at all diseased.

In regard to the comparative time, and danger of cutting and caustic, there can be no doubt that, so far as the first of these points is concerned, the former mode of relief is greatly preferable; while, as to the last one, there does not seem to be much difference between the two. Unless, therefore, it can be shown that the escharotic treatment is more complete and permanent in its effect than excision, it will be difficult to discover any good reason for abandoning the knife, or complicating it with the addition of caustic. The surgeons of the Middlesex Hospital have published an account of the cases treated under their inspection, which, although evidently drawn up with the desire of presenting a favourable view, may, of course, be regarded as an authentic statement, and not as the mere trumpeting of quackery. They here relate, that the process employed by their American coadjutor was to destroy the skin by nitric acid, then to make numerous incisions, and introduce chloride of zinc paste into the wounds, which were repeated daily for from two to seven weeks, until the object appeared to be accomplished. They have not concealed the severe and protracted suffering endured by the patients subjected to this painful and tedious procedure, nor have they shrinked from confessing its dismal results. Forty-two cases of cancer or scirrhous breast are recorded. Of these, five were considered unfit for treatment and declined; three left the hospital without any apparent local disease; and thirty-four still suffered from it, in the form of enlarged glands, tubercles of the skin, or open sores. Anything more shocking than this it is impossible to imagine; and I sincerely hope that the conclusive testimony thus published, in a form, externally at least, well suited if not intended for the table of a drawing-room, may tend to counteract the present rage for escharotic treatment.

It has long been a settled principle in surgical practice, that malignant tumours or sores should be either allowed to remain free from disturbance or completely removed, since tampering with them by irritating applications is the most certain means of exciting disease in the lymphatic glands or other textures. But the procedure advocated by the Middlesex surgeons was the most extreme degree of deviation from this rule, since it kept the local disease, together with the patient's system, in a perpetual fret for many weeks; so that no one need be surprised at the effects, which, indeed, these gentlemen thus admit: "Nothing could be more disastrous than this case; and there is no reasonable doubt that the tumultuous increase of the disease was directly owing to the local treatment." If caustic is ever used for destroying malignant textures, it should, therefore, be of such power and so employed as to strike at once to the root of the evil, and I am able to suggest efficient means for this purpose.

Mons. Velpeau, in speaking of the caustic made by mixing sulphuric acid with saffron, expresses his persuasion that it would be the best of all escharotics except for its expense and the difficulty of confining its action within certain limits. It occurred to me that sawdust would supply the place of saffron, and my assistants at the hospital ingeniously devised the following effectual means of restraining the extent of action: A solution of gutta percha in chloroform is applied to the skin for some distance round the part to be attacked; then a thick piece of the same material, with an aperture cut in it of the requisite size, and softened by exposure to heat, is pressed firmly so as to adhere everywhere to the surface thus prepared; a thin piece is next glued round the edge of the opening, so that, when supported by a stuffing of lint, it may form a wall inclosing the diseased part. Concentrated sulphuric acid, with about an equal weight of sawdust stirred into it, until the mixture assumes a homogeneous consistence equal to that of thin porridge, is lastly applied, in quantity proportioned to the extent of thickness concerned. In the first instance, as the pain is acute, opiates or chloroform may be used; but after a short while, so little uneasiness is felt that the patient can easily allow the caustic to remain for ten or twelve hours, when it will be found that the whole diseased mass, though covered with skin and several inches in depth, has been reduced to a cinder, presenting the appearance of strongly compressed tow. Under poultices, the slough separates in the course of days or weeks, according to its depth, and the sore then heals without any trouble. If, therefore, patients, from an unconquerable dread of cutting, should prefer the escharotic treatment, or if the circumstances, on any other account, should seem to render this method eligible, the procedure just described may be found useful.

In conclusion, I beg to offer the following principles or practical rules for the treatment of cancer.

1. The treatment of cancer may be divided into curative and palliative.
2. The curative treatment should not be undertaken when the local disease is so seated or connected as to prevent its complete removal; when the lymphatic glands are affected; and when the patient's general health is deranged.
3. Removal may be accomplished by means of the knife, escharotics, and ligatures.
4. Of these means, in general the knife is best, and ligatures the worst.
5. Escharotics may be used with most advantage when the disease is superficial.
6. Escharotics, employed with a curative view, should always destroy the whole morbid part by one application.
7. The palliative treatment is generally best accomplished by means of soothing applications and attention to the general health.
8. When the local disease is very troublesome, it may sometimes be relieved for a time by destruction of the morbid growth.
9. The best agent for this purpose, and also with a curative view, is concentrated sulphuric acid properly applied.—*Edinburgh Med. Journ.*, Nov. 1857.

41. *Epithelial Cancer.*—Mr. Henry Thompson exhibited to the Medical Society of London (October 24th) a woman, aged 70, who was first seen by him in July last, with an epithelial growth, the size of a large walnut, close to the right eye. It was too close to remove entirely with the knife. He therefore

employed a caustic, which, after six applications, had destroyed it completely. On examining the woman, a healthy cicatrix alone remained, and no trace of disease was seen. The escharotic employed was the strong sulphuric acid of commerce, made into a paste with the exsiccated sulphate of zinc. Mr. Thompson believed that the employment of escharotics for the removal of cancerous growths could only be justified in exceptional cases, but that this was, from the circumstances named, one in which it was decidedly preferable to the knife.

Mr. Hancock had removed many cases of a similar kind with the knife, but he never saw so perfect a cure by any means as the present case exhibited. There was scarcely any scar.—*Lancet*, Oct. 31, 1857.

42. *Foreign Bodies introduced into the Bladder.*—M. Denucé relates (*Moniteur des Hôpitaux*) the case of a woman who had introduced the handle of a stiletto into her bladder. After several days of severe suffering she came to the hospital, and as the urethra was found to be in a very dilated state, the extraction of the foreign body was easily accomplished, by means of a polypus forceps passed along the index finger.

M. Denucé has collected the particulars of 391 published cases, and the enumeration he gives of the bodies in question is both curious and useful. In 78 they were portions of catheters or lithotrity instruments, viz., 15 metallic catheters, 9 gum-elastic catheters, 7 gutta percha catheters (a large proportion, considering the short time these dangerous instruments have been in use), 28 catheters (their nature not being specified), 16 bougies, and 3 branches of *brise-pierres.* Then we have 82 needles, pins, or tags, 1 stiletto, 1 crochet-needle, 6 bone or ivory needles, 6 ear picks, 3 ivory whistles, 1 ivory spindle, 1 ivory stiletto handle, 15 leaden balls, 3 small keys, and 8 instances of metallic fragments of various kinds. In 12 bones or splinters of bone, in 10 pebbles or china, 6 pen-holders, 15 needle-cases, 10 pieces of tobacco pipe, 4 portions of glass tubes. In 21 instances fragments of wood, as 3 pencils, 1 piece of a match, 1 ramrod, 1 mustard-spoon handle, &c. In 34 there were fragments of plants, as ears of corn, stalks, &c.; in 26, fruits or kernels; in 4, tents of charpie, 1 strip of linen, 1 skein of cotton, 3 *débris* of cotton or wool, 2 pieces of cord, 4 portions of wax candle, 3 pens, 1 piece of whalebone, 2 leather boot-laces, 1 piece of tendon, 2 *débris* of fecal matter, 1 pessary, 1 shell, 14 instances of various fœtal *débris*, 6 locks of hair, 2 of larvæ of insects, and in 1 pills.

If we abstract from this curious list the bodies which have obtained accidental entrance into the bladder, whether from clumsy surgical manœuvres, or communications established through the walls of the bladder, either externally (as in the case of balls and wounds), or with the rectum, vagina, or ovary, there will still remain 258 cases in which no legitimate explanations can be given of the presence of these bodies. Those assigned by the patient are usually as singular as are the bodies themselves; some being said to find their way there while attempting self-catheterism, others from the patient having fallen on them, while others again are stated to have been swallowed. The true and principal cause of their introduction, when not accidental, is to be sought in the vagaries of an abandoned depravity. Of these 256 cases, 119 are stated as having been males, and 96 females; while in 41 instances the sex is not indicated. In 14 instances they occurred in children from the age of a few weeks to fifteen years.

After a foreign body introduced into the urethra has become propelled into the bladder, in a few days it begins to be covered with incrustations. At the end of some weeks these have attained a considerable thickness; while at the end of some months, true calculi may be constituted. The form of the body, however, exerts considerable influence upon the mode of deposit. In rounded or short bodies the incrustation becomes general, while in those which are elongated it takes place especially towards the middle. Thus, in most cases in which calculi have been formed on needles, the ends of these are found projecting beyond the deposit: and it is such calculi that especially give rise to cystitis and other dangerous accidents.

Among the 391 cases collected by M. Denucé, in 21 death took place independently of any operation. In 13 of these the affection was recognized at the autopsy; but it is not stated with precision whether the vesical affection was the cause of death; in 2 death resulted from the *débris* of a fœtus passing into the bladder; and in 6 it was the direct result of the introduction of the foreign body. These last were examples in which the points of pins or needles became imbedded in the walls of the bladder, giving rise to intense and fatal cystitis. Cases in which art does not intervene do not, however, always terminate thus, the efforts of nature in some sufficing to liberate the economy from their presence. Thus they may be carried out by the urine, especially when the bodies are small and women are the subjects. In 31 instances in which the age is specified, this occurred in 14 men and 17 women. Occasionally, certain bodies, such as broken needles, escape by penetration of tissue, and this is stated to have occurred in four cases.

As in the great majority of instances nature will not be able to secure the discharge of these bodies, the surgeon, in order to prevent the occurrence of dangerous accidents, must interfere, endeavouring first to secure their removal by extraction, and if unsuccessful, resorting to lithotomy. In the cases here collected, lithotomy has been had recourse to 125 times, viz., in males, perineal lithotomy, 87 times; recto-vesical, 2; hypogastric, 2: and in females, urethro-vaginal lithotomy in 22, and hypogastric in 12. Unfortunately, in only 61 of these cases has the ultimate result been stated. In 39 occurring in males, perineal lithotomy was performed in 36 (31 recoveries and 5 deaths), hypogastric in 2 (both recoveries), and recto-vesical in 1 (fatal). In the 22 cases occurring in females, there were 15 urethral or vaginal operations (13 recoveries and 2 deaths) and 7 hypogastric (5 deaths and 2 recoveries). In the whole number, therefore, 48 recoveries and 13 deaths. The hypogastric operation has thus proved very fatal, 5 deaths taking place to 4 recoveries; and in the latter, in two instances the operation consisted simply in enlarging an aperture already existing.

The performance of the operation may be rendered difficult by the nature of the bodies to be removed. Thus, their softness may be such as to render their recognition and removal difficult; the length of others may lead to their being seized in the middle, and brought across the aperture; while, if they have remained long in the bladder, the size and irregularity of the incrustations present additional obstacles. The precision of measurement attainable by lithotrity instruments, however, now comes to our aid. As to the particular operation indicated, it may be stated in a general way that the perineal operation in men, and the urethral in women, suffice for small bodies, or for such as are thin and elongated; those which are of larger size require the bilateral or vaginal operation; while the hypogastric, seeing its unfavourable results, should be reserved for quite exceptional cases. It must be remembered, however, that in women the urethral operation is almost always followed by incontinence of urine, and the vaginal by vesico-vaginal fistula.

Extraction of the foreign bodies has been performed in 112 of these cases, death following in 3. In reference to the influence which the introduction of lithotrity has exerted upon the improvement of extracting instruments, M. Denucé makes the following calculation: Of the whole 239 cases in which interference has taken place, 127 occurred prior to, 122 subsequent to 1830, when lithotrity may be considered to have generally established itself as an operation. In the early series, lithotomy was practised 100 times, and extraction 27 times only; while in the latter series, it was resorted to but 21 times, and extraction 101 times. Thus, formerly lithotomy, with its mortality of 15 per 100 was the rule; while now, extraction, with 3 deaths in 112 cases, is the rule, and lithotomy the exception. The progress that has been made is still more apparent when we consider the case of the male urethra, with its long, narrow, sinuous canal. Of 20 cases of extraction noted prior to 1830, 16 occurred in women, and but 4 in men; while of 73 since that epoch, in which the sex is indicated, 46 occurred in males, and 27 in females.—*B. and F. Med.-Chirurg. Rev.*, July, 1857.

## OPHTHALMOLOGY.

43. *Spasms of the Eye after Extraction of Cataract.*—Mr. WHITE COOPER, in a clinical lecture (*Lancet*, June 6, 1857), makes some interesting observations on this obstacle to success after extraction of cataract—an accident not sufficiently dwelt on in the books, and one which is not of uncommon occurrence.

From the mode in which the muscles of the eye are arranged, any sudden and strong contraction of them must compress the eye, and may force the iris between the edges of the corneal section and interfere with the success of the operation.

The symptoms of spasms of the muscles of the eye "are sudden, acute, grasping pain, with a sensation as if the eye were drawn back in the socket, generally attended with coruscations of light and colours, the result of compression of the retina. In the majority of cases it comes on within the first thirty-six hours after operation, generally during the brief interval between sleeping and waking, or just when the patient is dropping off to sleep, and is most marked in persons who have suffered from disturbance of the nervous system, as indicated by neuralgia, spasms, and cramps.

The immediate indication is to tranquillize the nervous system, and this object is best attained by a soothing cordial draught, composed of thirty drops of Hoffmann's anodyne, twenty drops of Squire's solution of bimeconate of morphia, and a drachm of the compound tincture of lavender, in an ounce of water. In some cases I have given six or eight drops of the tincture of Cannabis Indica on a lump of sugar with excellent effect. The most grateful application to the eye itself is a fomentation of hot water, but in using this the utmost gentleness is necessary, the irritability of the eye being so great that a very slight touch will often bring on a return of the spasm. For the same reason, it is preferable to darken the room, thoroughly excluding the light from the patient, rather than to irritate the eye by compressing it with bandages. And here let me give you a hint; never allow a looking-glass to remain in the patient's room. I have several times known much annoyance caused by a gleam of light falling on a mirror, and reflected to the patient's face; for the same reason have any chinks in the shutters stopped up; more mischief may be done by a bright ray of light streaming through a crevice, than by a considerable amount of general light, gradually admitted.

It must be borne in mind that, for the better illustration of my subject, I have selected the most marked cases in my note-book. It by no means necessarily follows that destruction of the eye should follow spasm of the muscles; the immediate effect will almost certainly be disturbance of the section, and prolapse of the iris. The prolapse may, however, subside, or not be sufficiently great to interfere materially with the success of the operation; or again, if the prolapse be so considerable as to cause obliteration of the pupil, vision may still be restored by an artificial pupil.

Prolapse of the iris will be indicated by a slight œdematous swelling, commencing at the inner canthus, and stealing along the margin of the upper lid; the lid becomes exquisitely tender, so that the patient shrinks from the slightest touch, and there is generally the sensation of a foreign body under it. There is a copious discharge of scalding tears, the patient avoids light and the slightest movement of the lid. If you do manage to raise the lid, you will find the cornea thrown upwards, and there will be more or less redness of the conjunctiva and sclerotic; simultaneously with these local indications the patient will complain of aching over the brow, extending down the side of the nose and cheek-bone, which is tender to the touch; the pain is aggravated at night.

The treatment which I believe to be best for prolapse of the iris is, first and above all, absolute quiet of the eye; the least handling or attempt to open the lids almost certainly brings on a return of the spasm, and of course keeps up the mischief. The object we should steadily keep in view is, to allow the iris to recover its position, and the section to become firm. The utter inability to raise the lid points out that Nature requires it to remain closed, in order that she may perform her work.

It is generally recommended that the prolapse should be touched with nitrate of silver. In some cases I have seen this useful, in others hurtful; and on the whole, I am of opinion that time and quiet will attain the great object better and with less hazard than the use of the caustic. I remember a case in which I assisted the late Mr. Dalrymple. Three weeks after extraction the eye remained irritable, there being a small prolapse, but sight was returning favourably. Wishing to hasten matters, Mr. Dalrymple touched the prolapse with caustic; violent pain came on, subacute inflammation followed, and the eye was lost. I believe that he used caustic no more in such cases.

Time and quiet, then, are the main agents in the cure of prolapse of the iris; when the cicatrix is forming, advantage may be derived from the use of belladonna; and if there be congestion, the application of a leech or two from time to time will be serviceable. There is one thing, however, which we are called upon to ameliorate, and that is the frontal neuralgia. An ointment, composed of one drachm of extract of opium to four drachms of strong mercurial ointment, well rubbed in at night, is often efficacious: but I have found still greater relief afforded by painting the painful surface freely with a lotion composed of one grain of nitrate of silver dissolved in half an ounce of nitric ether. This sometimes acts like a charm in removing the pain. Another useful application is chloroform thus applied; a layer of cotton-wool is to be spread over the forehead, then sprinkled with chloroform, and covered with oiled silk. The vapour is thus confined without coming in contact with the skin.

There is a point in the after-treatment of cataract cases to which I would draw your attention—namely, the importance of avoiding any sudden startling of the patient, especially from sleep; as I look back upon the cases in my practice in which there has been prolapse of the iris, I may ascribe this mainly to two causes—the eye being struck, or the patient being startled. It is not necessary that there should be a real blow; a mere touch will be sufficient to cause a sharp action of the muscles of the lids and of the eye, and so the flap may be displaced. When, therefore, the eye is being cleansed, the patient should always be warned when the sponge or rag is going to be applied; for if not so prepared, a start will generally take place, and the eye may be struck.

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44. *Diphtheritic Ophthalmia.*—This is an affection almost unknown in France; nor is there any mention made of it, either in ancient or modern French treatises, on diseases of the eye. In Germany, however, much has been published regarding it; and, from the nature of its progress—from its severity, and its special characters, it is a malady deserving a place in our nosological tables. M. Gibert of Geneva, whose service as *interne* in the hospital of St. Eugenie afforded him an opportunity of observing the disease, gives a description of it, and from his remarks we subjoin the following particulars:—

Diphtheritis of the mucous membrane of the eye is as general as that occurring in the larynx. In 1846 and 1847 M. Chassaignac described a purulent ophthalmia, which was accompanied by the formation of false membrane; this, however, is quite a different affection, bearing the same relation to the diphtheritis of the eye, which ulcero-membranous stomatitis does to true diphtheritic stomatitis. In ocular diphtheritis, the mucous membrane is dry, of a pale gray colour, and never during the whole period of the formation of false membranes, exhibits the granulations characteristic of purulent conjunctivitis. In the first case the circulation is almost completely interrupted, while in purulent ophthalmia the mucous membrane is highly vascular and the circulation active. According to Graefe, a characteristic sign of diphtheritis is, that on account of a more marked condition of stasis, the mucous membrane contains less blood serviceable for the purposes of circulation; moreover, in purulent ophthalmia, at first a lemon coloured secretion takes place, which quickly becomes turbid and purulent; in diphtheritis, there is at the first no secretion, the eye being completely dry; at a later period, a liquid of a dirty gray colour oozes away, composed, says Graefe, of tears, epithelial scales, and some colouring matter of the blood.

The symptoms are, redness of the eyelids; a degree of swelling, frequently to an extent unusual in eye diseases; an amount of hardness of the eyelid, which, upon being felt, imparts a sensation of some solid exudation; a feeling of heat often insufferable, and considerably greater than occurs in purulent ophthalmia; and pain, sometimes slight, at other times acute.

The false membrane, on being detached, may correspond in form to the eyelid, and sometimes even to the entire conjunctiva; it is extremely adherent, a circumstance in which it differs from the false membranes described by M. Chassaignac. Underneath it the mucous membrane is yellowish, smooth, and glistening; the vessels are filled with coagulated blood, and are scarcely discernible.

Three stages in the complaint may be observed: in the first, the false membrane is formed: in the second, it is detached: in the third, there is a contraction of the tissues, sometimes with incurvation of the conjunctiva—a state which of itself is sufficient to distinguish this disease from purulent diphtheritic ophthalmia, where it never occurs.

The cornea becomes opaque, occasionally with remarkable rapidity; it may become ulcerated, softened, or even perforated. These lesions are very serious, and the more so accordingly as they are earlier in making their appearance. This consideration is of much importance in our prognosis; indeed, Graefe lays it down that if the first stage is in active progress when the cornea is attacked, and no hope is left us of reaction commencing, the eye may be considered as irrevocably lost. The prognosis must also depend upon two other circumstances, viz., the state of the general health, which in most cases determines the local affection, and again, the characters of the disease in the eye, which in its turn sometimes becomes so serious as in a few cases to lead to a fatal result.

The severity of an epidemic must also influence the prognosis of the disease, since, as in laryngeal diphtheritis, this disorder likewise assumes an epidemic form. It has never been observed before the age of one year; purulent ophthalmia, on the other hand, being common in newly born children. It frequently supervenes during the course of another disease, such as measles, hooping-cough, disordered dentition, etc.

With regard to treatment, Graefe disapproves of caustic applications, as only adding to the severity of the disease, to the "stasis" already existing, by their acting in a manner much like the malady itself; and states, that this method of treatment leads to very different results in ocular diphtheritis, from those it produces in other pseudo-membranous affections. He recommends, first, The application of leeches to the root of the nose, "*la racine du nez,*" so as to procure a continual flow of blood; and 2d, The application of ice, which allays both the excessive heat and pain; but which must be suspended as soon as the period of resolution begins to manifest itself. Along with these means mercurial preparations, internally and externally, are employed. Besides, care must be taken to keep the diseased eye clean, and to keep the healthy eye shut, as a precautionary measure. Graefe has seen in adults a gangrenous form of ophthalmia making its appearance, which he considers an additional proof of the special nature of the malady just described.—*Ed. Med. Journ.*, Nov. 1857, from *Archiv. Gén. de Méd.*, Sept. 1857.

45. *Two Cases of Strabismus and very Imperfect Vision—Operation and Cure.*—Two of the most remarkable cases in illustration of the advantage to vision often obtained by the operation for strabismus that we have ever seen, have just occurred in the clinique of Mr. CRITCHETT. That patients who squint have very defective sight, more especially in the affected eye, and that this impairment is usually remedied by the operation is well known to all who have paid attention to the subject. In the following cases, however, the defect was so extreme, and yet the relief obtained so great, that we shall venture to record them.

John F., a healthy-looking boy, aged 10, was brought to the hospital six weeks ago, on account of his sight being very bad, and with the complaint that he saw things double with the right eye. He had a most extreme convergent strabismus, the right eye being drawn quite into the palpebral angle. On covering up the left eye he was made to walk across the room, when he stumbled against the chairs, etc., and even walked against a projecting corner of the wall; a pen being held before him, he said that he saw three, and being told to touch it put out his hand a foot to one side of it. With the right eye he could not distinguish capital letters, though he could read small print with the left. His progress at school had been very slow, owing, it was believed, to his very defective sight. He could only see things clearly and without duplication when the right eye was covered. The eyes appeared perfectly normal in every respect, the squint excepted, and he had no signs of brain disease. The history given of the squint was that his eyes had been perfectly straight until an attack of ophthalmia, which lasted from the age of two to that of four, and during which intolerance of light was the chief symptom, and after the subsidence of which the convergence was observed. He had never had fits.

The imperfection of vision being so unusually great, it was feared that either retinal or cerebral disease must exist. A careful examination was made with the ophthalmoscope, but no morbid conditions were observed other than that the retina of the lowest part of the globe appeared as if a little raised. Of cerebral disease there was not the slightest evidence.

The operation was performed at Mr. Critchett's request by Mr. Hutchinson; both internal recti being divided by subconjunctival section on the same day. The rectification was perfect, and on testing the sight as soon as the boy recovered from chloroform, it was found that he could see nearly as well with one as the other. A fortnight later the eyes were quite straight, without the slightest undue prominence, and he could see to read small print with the affected eye, and distinguished all objects perfectly. No doubt could be felt but that the imperfection in vision had resulted solely from the squint.

A yet more remarkable case occurred a few weeks later. A very intelligent boy, aged 11, of Scotch parentage, was brought on account of a severe squint which affected the right eye. The squint had been first noticed after a prolonged attack of ophthalmia at the age of two, in which the eyes had been closed for several weeks. He had never had fits or any severe illness. He had learnt to read well, and could see perfectly with the left eye, but with the right he could but just tell light from darkness. He spoke of it as his "blind eye." When taken into the darkened ophthalmoscope room he could not see the single gas flame, but on a strong light being thrown into the eye by the reflector he exclaimed, "Now I see a light!" Thus there appeared no room for doubt but his perceptive power with this eye was of the feeblest possible description, and only extended to the recognition of brilliant lights. He was taken immediately after this examination to the operating theatre, and Mr. Hutchinson again performed the operation on both eyes. As soon as the effect of the chloroform had sufficiently passed off, Mr. Critchett carefully tested the boy's sight. With the sound eye covered he could distinguish all large objects, could tell the difference between coins, see watch-hands, &c., although he could not see to read. A week later, vision had not much improved, although the parallelism was perfect. He could, however, easily recognize all large objects. There was a degree of double vision, and as the pupil was still widely dilated and immovable from the effects of the belladonna used a week before, there appeared every reason to hope for much further benefit.—*Med. Times and Gaz.*, Nov. 21, 1857.

## MIDWIFERY.

46. *Quadruplet Births.*—These are so rare—as shown by the fact that in 170,901 labours in the Rotunda Hospital, Dublin, there was but one instance of it—that the following case, which occurred in the practice of Mr. French, of Ballygar, and communicated to the Dublin Obstetrical Society (March 25, 1857), will be considered of interest.

"Bridget Loghan, aged 38, a stout, healthy countrywoman, several months advanced in this her sixth pregnancy, whose previous deliveries had been in every respect perfectly natural, and who represents that, with the exception of having recently become thin, pale, and suffering from œdema of the feet and ankle-joints, her health has been as good as during former pregnancies; her unusually great size, which had attracted the attention of all her acquaintances, and caused them to suspect that she was carrying twins, not even preventing her from uninterruptedly discharging the laborious duties of her household—was on Saturday, the 10th January last, attacked by slight uterine pain, which continued until the following Monday evening, when, about 11 o'clock, she was, under the supervision of a midwife, delivered of a living female child, which presented by the feet. Within the course of the ensuing hour, a second female child, which presented similarly, was expelled without assistance. All uterine action now disappeared; and, after the lapse of twelve hours, the uterus still continuing large, created a suspicion that there might be still another child, and induced the attendant, who had moreover become alarmed by the non-expulsion of the placenta, to at length summon Mr. French, who arrived on Tuesday morning, at 12 o'clock. On placing the hand over the umbilicus, Mr. French instantly detected the presence of the distended uterus; and on making a vaginal examination, found the head of a third fœtus floating above the brim. He at once administered a dose of ergot, followed in half an hour by purgative medicine. After the lapse of two hours, finding the patient still in the same state of uterine inertia, Mr. French at once proceeded to deliver her by version. This child proved to be a male, and only breathed for a few minutes. The abdominal tumour still being very large, the hand was again introduced, when the membranes of a fourth child, also presenting by the head, were detected. These being ruptured, delivery was effected, as in the preceding instance, by version, the child, which was a male, being born alive. The quantity of liquor amnii in both these cases was exceedingly great. In consequence of the total absence of uterine contraction, it now became necessary to remove the placentæ by the hand. There were two in number. The following is Mr. French's description of them:—

"'To the centre of that first extracted there was attached a single "stalk-like" funis, about one inch in length, which then divided into two branches, the last child and its membranes being (according to Dr. French's views) inclosed within a bag of membranes, common to it and to the third; the other placenta was of the ordinary "battledore" species. The children all died: the first on the second day, the second on the third day, the third immediately after birth, the fourth after the lapse of a few hours. The convalescence of the mother was rapid and complete."'

Dr. Jennings concluded with the observation: "If Mr. French's description of the first placenta be correct, the only way in which we can account for the anomaly is, by supposing that two totally distinct embryos were developed in a single blastodermic membrane, and thus became subsequently included within a single amniotic membrane, a deviation from the customary law of nature, directly contrary (so far as we are instructed) to all received doctrines of ovology. Indeed, on more carefully reading his own history, we find that he had to rupture a distinct set of membranes for each of the two last children, thus proving that there must have been two separate amnions. It is probable that had his examination of the placenta been more careful, he would have found that there were originally two distinct 'battledore' placentæ, the edges of which, together with the placental extremities of the funes, had become intimately and similarly fused together by adhesion. Had both children been in any way connected (as, for instance, the Siamese twins), we could readily understand them to have been another specimen of '*monstrosity by inclusion,*' both being inclosed within a single amniotic sac, in consequence of two ovula having been originally included within a single vesicle—a sport of nature, not confined (as we are well aware from the writings of the immortal Harvey) to the animal kingdom."—*Dublin Quarterly Journ. of Med. Sci.*, Nov. 1857.

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47. *A New Symptom of Rupture of the Uterus.*—Dr. M'Clintock related to the Dublin Obstetrical Society (May 9, 1857) some cases of rupture of the

uterus and of the vagina, to illustrate the obscurity which may occasionally surround the diagnosis of this accident when occurring during parturition. He particularly drew attention to a symptom observed in one of the cases, which he considered might hereafter be found of value as diagnostic of laceration of the uterus or vagina. This symptom was *an emphysematous state of the integuments covering the hypogastrium.* Its existence was detected by the stethoscope while searching for the fœtal heart. Examined for in this manner, the crepitation was loud and distinct, but to the hand it was not so obvious, except when firm pressure was made in the proper situation, then the crepitus was evident, and was recognized by Dr. G. Montgomery, and by several pupils who happened to be present at the case. The other symptoms present were of so ambiguous a kind that the possibility of rupture having taken place seemed doubtful. There was no prostration, no recession of the presenting part, and no cessation of the pains; the woman was able to be up and to walk about. Having ascertained that the emphysema had not extended downwards from the chest or neck, and that it was confined to the supra-pubic and iliac regions, Dr. M'Clintock inferred that the air had obtained an entrance through some rent in the genital passages. Acting upon this conclusion, the woman was delivered by craniotomy (the fœtal heart had not been heard for two hours previously). She sank rapidly after delivery, and died in a few hours. The left broad ligament was found emphysematous, and a tear existed in the left side of the uterus at the junction of the body and cervix. At some distance from this the peritoneum was found rent also, and a considerable quantity of blood had been effused into the abdominal cavity.—*Dublin Quarterly Journ. of Med. Sci.*, Nov. 1857.

48. *Two Cases of Hernia of the Ovaries, in one of which there was a Periodical Enlargement of one or other of these Organs.* By Henry Oldham.—The two cases which I beg to present to the Royal Society, are examples of a rare conformation of the female sexual organs, in which the two ovaria have descended through the inguinal canals and have become permanently lodged in the upper part of the external labia; and in both of them the most careful and repeated physical examination has failed to detect either uterus or vagina. I should hardly, however, have ventured to bring them before the Society simply as examples of faulty conformation—because, although rare, yet they have been observed[1]—had not the first of the two cases presented the interesting physiological peculiarity of a spontaneous periodical increase of one or other of the ovaria, followed by its gradual reduction, thus supplying direct evidence of an ovarian menstrual act.

The subject of the first case applied to me in September, 1851, for advice on account of never having menstruated. She was nineteen years of age, of a tall figure, symmetrical frame, well-expanded pelvis, and womanly aspect, bearing all the marks of a full completion of the physical changes of puberty; and her general health, though not robust, was fairly good. She was one of a family of five children, and her sisters had menstruated between fifteen and sixteen years of age. The principal point which was elicited from her history in connection with her complaint was that, eighteen months before, a swelling had somewhat suddenly appeared on the right side of the external organs, which had caused her some pain for a few days and had then disappeared. In four or five months a similar swelling again appeared, but was attended with so much suffering that a medical man was consulted, who took it for an abscess and ordered it to be poulticed. Again it passed away, again to recur at the end of two months; and so it had gone on at irregular intervals until the time of her seeing me, when the pain of a renewed attack of unusual severity had occasioned her some alarm. On examination, a swelling the size of a goose-egg was found to extend between the external abdominal ring and the centre of the labium on the right side, which was very tense and firm to the touch; and the cellular tissue, skin, and mucous membrane of the labium were œdematous and inflamed. It was painful, but by no means so painful as a labial abscess, which in its general aspect it resembled; and there was but little febrile disturbance. A more critical examination detected the presence of a solid body of an oval shape within the tissue of the labium, which proved to be the ovarium, whose enlargement had so compressed the surrounding tissues as to swell and inflame them. On the opposite side there was another oval body, the size of a walnut, which passed just beyond the outer ring, but readily slipped into the canal. This was the left ovary in a quiescent state. The external sexual parts were normally formed; but the ostium vaginæ was closed, a slight indentation in the median line alone marking its position. Frequent careful physical examinations failed to detect any trace of a vagina or uterus, and the conclusion arrived at was that these central pelvic organs had not been developed. The mammary glands were fully formed.

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[1] *Vide* Deneux, "Recherches sur la Hernie de l'Ovaire," 1813.

I have had repeated opportunities during the six years which have intervened since first the case came before me, of examining the organs both during the periods of ovarian excitement and during the intervals. For nearly two years, however, I completely lost sight of her, when I learned to my amazement that in spite of my strong admonition both to her mother and herself that she should lead a single life, she had married. For some time past I have seen her more frequently, and have watched the recurrence of the ovarian swellings.

For the first three years the right ovarium was exclusively enlarged, and the intervals were not so regularly marked, varying between three and six weeks; excepting for the first year, when they were much longer, occasionally extending to three months. For the last two years the left ovarium has been far more frequently affected, the right remaining quiescent; occasionally both are painful and tumid, but even then one more than the other. The intervals are now pretty regularly three weeks. The acute inflammatory symptoms which accompanied the onset of these swellings have long since ceased to recur, which is obviously due to the loose state of the tissues from repeated stretching, so that the swollen organ is no longer compressed.

The accession of a menstrual time is sometimes suddenly felt. She will go to bed well, and in the morning the ovary will be swollen: more commonly, however, it is very gradual, augmenting in volume for four days, then remaining stationary for three days, and then gradually declining; the whole process, before the ovary is reduced, generally lasting ten or twelve days. On separating the ovary, when at its height of swelling, from the tissues surrounding it, it appears scarcely, if at all, less than double its usual volume; its outline is clearly defined, and it is plain that the whole, and not merely a part of the organ is involved. There is no suffering worthy of notice during the time: the swelling is tender if pressed; and tender, too, in the act of sitting down or rising up; but she walks about as usual without distress, and there is but little lumbar or hypogastric pain. Neither are there any manifest sympathies excited, either of the mammary glands or other organs. Nor is there any vicarious flux, either of blood or any secretion, with the exception of an excess of saliva, but this not in any large flow. The ovary alone appeared to be engaged in this periodical act, which it is not too much to suppose, in accordance with modern physiological views, would have been attended with a flux of blood, had not the organs which normally supply it been absent.

But while this may be said to represent the usual course of a period, yet the volume of the ovary, and the length of time it remains swollen, is subject to occasional variation; sometimes being much less tumid, and dying away in a shorter time.

The repeated attempts at sexual union have only had the effect of somewhat loosening the tissues around the vulva, but the vagina remains imperforate as before, and is beyond the reach of surgical remedy. It may be added, that the subject of this history recognizes an increase of sexual feeling at and soon after the periods of enlargement of the ovary.

The second case was that of a young woman who had attained the age of twenty without having menstruated. She was a tall, strumous-looking person in weak health. There had not been any well-marked efforts at menstruation, but she had suffered slightly from lumbar pain. The mammæ were well developed. The pelvis was fairly formed. On examination I found the two ovaria just appearing beyond the external abdominal rings, and readily returning by pressure into their respective inguinal canals. They were of equal size and similar shape, being ovoid bodies about the size of small chestnuts. They were not tender when touched, although organically sensitive, and she had never experienced pain in them. The external sexual organs were somewhat less perfectly developed than usual; the vaginal orifice was closed, and no trace of a canal or uterus could be detected by exploration with a catheter in the bladder and the finger in the rectum. These organs, as in the former case, were absent. During the time I saw the patient, which was only for two months, the ovaria did not enlarge, although her general health improved.—*Proceedings of the Royal Society.*

## MEDICAL JURISPRUDENCE AND TOXICOLOGY.

49. *Suicide and Intoxication by Chloroform.*—M. Chereau relates a very interesting case in which suicide was produced by chloroform. It occurred in the person of the head of a house of business, who had met with considerable losses. A sufferer from hemicrania, he became also melancholy, endeavoured to avoid the society of his friends, and exhibited eccentricities which alarmed them. Except the neuralgia, he had not previously suffered from any illness. He had long been in the habit of employing inhalations of sulphuric ether, to a moderate extent, for the relief of the pain; but he now made use of enormous quantities, in the hopes of procuring death; his breath, skin, and clothes, giving out a strong smell of this substance. One day he escaped from the surveillance his family had placed over him, and, having procured 37½ drachms of chloroform from a druggist, he repaired to an hotel, where his manners gave rise to no suspicions. Not having shown himself for more than twenty-four hours after, and a moaning being heard, his door was forced open, and M. Chereau was sent for. He found him with a cadaverous countenance, the presence of life being indicated by a slow, but regular heaving of the chest, and some subsultus of the muscles. The pupils were widely dilated and insensible, the mouth half open, and the tongue dry and parchment-like. The jugular veins were distended, and the fingers were convulsively pressed against the palms of the hand, leaving impressions of the nails. The whole surface of the body, front and back, and the extremities, were covered with lividities, exactly like those often observed on dead bodies, or in individuals asphyxiated by carbonic acid gas. The heart still beat, but so feebly that it required sustained attention to perceive its weak and rare contractions. The pulse was felt with still greater difficulty. The respirations were sometimes irregular and short, at others deeper, and separated by long intervals. The bladder was distended, and the bedclothes were stained by urine that had escaped. A fire was lighted in the grate in order to create a current of air, the room being filled with suffocative emanations. The whole surface of the body was rubbed with heated cloths, insufflation was performed from mouth to mouth, and several cups of very strong coffee were administered. At the end of the first hour the patient, by repeated calling to, could be got to answer in some sort; and the appearance of hebetude and stupidity had not entirely passed away in another hour. He looked around him, and the pulse furnished 50 feeble, depressible pulsations. He continually twisted himself about in bed, suffered from an unquenchable thirst, and complained of a terrible pain in the left hypochondrium. No avowal of the deed could be extracted from him; but the smell sent forth by every column of air expelled from his chest, and the discovery of the bottle, sufficed for an explanation. The hopes entertained of continued amendment were not realized. The pulse did not rise, the countenance did not improve, and the excessive pain in the hypochondrium resisted all attempts for its relief. His friends, moreover, without the consent of his

attendant, removed him from the hotel to an hospital; and although he retained his consciousness on the road and conversed, he died when he reached the doors. No autopsy was allowed.

In a subsequent number of the journal in which this case appeared, M. de Méric, of London, related one of excessive use of chloroform that had occurred to himself. A chemist, 30 years of age, originally of good constitution, having, a few years since, become habituated to the use of morphia, while taking it for abdominal inflammation, found that it took no effect in relieving sleeplessness, from which he frequently suffered. He therefore substituted inhalations of chloroform, to which he became addicted, and the more so, because he sought by their means to render himself insensible to chagrin, which was more imaginary than real. His excessive employment of chloroform was discovered by his family some three years since, it then being found that he passed portions of days, and especially the nights, under its influence, thus producing a factitious sleep, and perhaps fantastic dreams. His countenance had become altered, his manners were strange, and his moral disposition was impaired. For a time, through the influence of a relative, the habit was restrained; but the use of the chloroform was resumed, and he is supposed to have indulged in it for the space of five years. He remained in bed until twelve or one o'clock in the day, repeating the inhalations whenever he awoke; and during the day he had the appearance of a man given to drink. He employed about a pound every five or six days; and on arousing from the influence of the chloroform he suffered not the slightest uneasiness from its employment, escaping the headaches and other inconveniences suffered by those who consume alcoholic fluids in excess. On the 8th August, returning home by the railroad, after making a purchase of chloroform, and possibly while under the influence of this substance, he fell from the carriage and broke both his legs. Double amputation became necessary. The patient was exceedingly feeble; but, in spite of the habit he had acquired, there was no difficulty in rendering him insensible by chloroform. To morphia, however, which was administered to him after the operation, he was completely insensible, and it became impossible not to yield to his entreaties to be allowed to inhale chloroform. He made, under the superintendence of a dresser, constant use of this at short intervals, and in forty-two hours after the operation died completely exhausted. No autopsy was allowed, and decomposition of the body ensued with frightful rapidity.

M. Vigla, quoting the above cases, states that he had already related a case in the *Moniteur des Hôpitaux*, 1855, exemplifying the effects of the excessive use of chloroform. His patient was an engraver, 33 years of age, of robust constitution, and who had always enjoyed good health until his thirtieth year, when he became the subject of spasmodic asthma. He had employed every variety of means without avail, when in April, 1855, his medical attendant advised the inhalation of chloroform. This was to some extent successful; but the tolerance of the remedy becoming established, the patient went on, of his own accord, increasing the dose, until this had become enormous. Thus the mean daily quantity he inhaled between the first and tenth of May amounted to ʒ52½. Jaundice coming on, on the 14th of May he diminished the quantity during four days; but, the paroxysms becoming insupportable, on the 18th he inhaled the enormous quantity of ʒ112½. At the beginning of June a new attack of jaundice occurred; he again suspended the anæsthetic, and the paroxysms increased. He returned to the inhalations, and from the 4th to the 25th of June; the day he entered the author's *maison de santé*, he consumed about ʒ40 per diem. In spite of these large doses, he was only slightly relieved, slept but little, and was constantly in a state of hebetude, from which the paroxysms scarcely aroused him. When he was admitted into the *maison*, his countenance was pceuliar, his brilliant but moistened eyes, expanded features, and smiling lips, giving him the appearance of one ravished with delight, or under the influence of a commencing intoxication. For two or three days after his admission small quantities of chloroform were still allowed; but delirium tremens then supervening it was entirely cut off. The delirium tremens continued from the 27th of June to the 4th of July—his delusion consisting a portion of the time in supposing that he was the subject of and in constant danger of poisoning from chloroform. On the 4th he still exhaled some of the odour of this substance, although he had not employed any of it since the 27th June. His attacks of asthma had ceased, and he left the establishment 8th of August. Seen since that time, however, it has been found that his asthma has returned; but his reason has continued free, and he declares he has not again attempted the use of chloroform.—*Med. Times & Gaz.*, Nov. 21, 1857, from *Union Med.*, Nos. 106 and 112, and *Journ. de Pharm.*, Oct.

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50. *Death from Chloroform*—Mr. C. Heath, House Surgeon to King's College Hospital, gives the following report of this:—

"The patient was a female, aged 17, under Mr. Partridge's care, with syphilitic warts and mucous tubercles. She was admitted July 8, and had had chloroform administered twice, in order that the sores might be touched with nitric acid, and on both occasions not the slightest ill effect was produced. On Friday evening last chloroform was again administered for the same purpose; only a drachm was put in the inhaler (Snow's), and as soon as she became unconscious the inhaler was removed, and the acid applied. I and my assistant (who administered the chloroform) then went to see another patient in the same ward, and then washed our hands, during which time the patient was moving her legs about much as they do when recovering, and in addition she made water over the bed. I gave directions to the nurse to apply a poultice as usual, and left the ward, having been up to the bed first without noticing anything unusual about the patient. In a few minutes the nurse came down for some medicine for another patient, and mentioned that this one was looking very pale; I sent up Mr. Liddon to see her at once; he found her pale and senseless, dashed some water over her, and called me, and I went up immediately. I found her pulseless and cold, and immediately commenced artificial respiration (Marshall Hall), and sent for the galvanic battery; this was brought and applied without effect, and the artificial respiration was continued for twenty-five minutes without the slightest effect being produced.

*Post-mortem.*—Great thickening of mitral valves, and organized lymph in the pericardium, and attached to surface of heart. Other organs healthy."—*Med. Times and Gaz.*, Aug. 15, 1857.

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51. *Poisoning by Twelve Drachms of Laudanum; Recovery.*—Dr. G. C. Gibb records (*Lancet*, July 25, 1857) a remarkable case in which twelve drachms of laudanum were swallowed, with a suicidal intent, by a gentleman seventy-two years of age, healthy and temperate, and not in the habit of using opium. No symptoms of poisoning occurred; the patient passed a restless, sleepless night, and nine hours after the laudanum was taken spontaneous vomiting occurred, and under careful treatment he entirely recovered.

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52. *Acute Poisoning by Phosphorus.* By Dr. Th. Nitsche.—A soldier, æt. 21, previously healthy, was received into hospital on the 21st of May. On closely interrogating the patient he admitted that on the 19th he had attempted self-destruction: that he had first swallowed all the mercury in a barometer, but that this passing away by his bowels, he determined on resorting to phosphorus. On the evening of the 20th, he took the ends of six ordinary packets of phosphorus matches and in three hours afterwards was seized with vomiting, which occurred frequently; and during his passage to the hospital, a large quantity of the matches were expelled from the stomach. On being received into the military hospital, his pulse was frequent, and tongue loaded; his head was hot, and he complained chiefly of headache. Auscultation and percussion revealed only a somewhat increased area of hepatic dulness. With the view of removing from the stomach the phosphorated ends of the matches which remained, an emetic of ipecacuanha and tartarized antimony was given; cold applications were directed to the head, and subsequently magnesia milk in considerable quantity was administered. After the emetic, the stomach ejected a greenish fluid which contained portions of undigested food, mucus, and some ends of the phosphorus matches. The fluid did not emit any odour of phosphorus. On

the following morning (22d) the symptoms were little changed. The headache was less severe; pulse 92; face red; the region of the stomach slightly sensible to pressure, and the patient complained of commencing pains in each hypochondrium. The magnesia was continued. In the afternoon the turgescence of the face had increased, as had also the hypochondriac pains, and there was burning thirst, with dryness of the mouth. The headache had completely disappeared. The urine was high-coloured and frothy; its specific gravity increased, and it was found to contain albumen and exudation-cells; the colouring matter was augmented, as were also the sulphates and phosphates, but the chlorides were diminished in amount. This state of the urine continued during the whole course of the disease. The estimate as to the quantitative analysis of the urine was only taken by the eye, so that it is not of much value. On the 23d, three days after the poison had been taken, the thirst and dryness of the mouth, with the hypochondriac pains, had increased, and there were, moreover, darting pains in the chest. The turgor of the face was heightened; the sensibility of the epigastric region more marked, and the tympanitic percussion-sound of the stomach audible over a greater extent. Giving credence to the general impression that phosphorus induces inflammation of the stomach, leeches were applied to the epigastrium, and iced applications employed. Ice was also given with the view of assuaging the intense thirst. The magnesia was continued. Up to the afternoon the symptoms had undergone no alteration, except that the face had assumed a remarkable bluish-red colour, from which, however, the middle of the face was perfectly free; a colourless band of about an inch in breadth, extended from the highest point of the forehead to the chin, and was sharply defined, giving to the face a most peculiar appearance.

The bowels not having acted since the poison was taken, an enema was administered, which produced an evacuation of a yellowish hue, but not possessing any odour resembling that of phosphorus. Owing to the carelessness of the attendants, the opportunity of chemical examination was lost. On the 24th (the fourth day) the pains in the hypochondrium had to some extent abated, but those of the breast had become intolerable, notwithstanding which, a physical examination of the chest did not show any remarkable change in the respiratory organs. The bluish-red colour of the face had changed into a perfectly cyanotic hue, the median line continuing free from all colour. The epigastric pain ceased; the patient sweated profusely, and the vapour arising from the body gave out an intensely phosphoric odour, particularly perceptible on raising the bedclothes. The breath was perfectly odourless.

A peculiar symptom now showed itself, viz., the deprivation of sight. The patient, who retained perfect consciousness, stated that in the horizontal posture he could perceive a feeble ray of light, but that when he sat up he could not see at all. The pupils were so dilated that only a narrow ring of the iris was visible, and they were uninfluenced by light. He now complained of darting pains in the eyeballs; the pulse was 100, but moderately full and strong. In the afternoon, the pulse rose to 140, and was small and weak; the sense of hearing was lost; the sweat was profuse, and the odour of phosphorus was stronger than in the morning; the extremities were cool, and the second sound of the heart and great vessels were no longer audible. The patient, who still retained perfect consciousness complained of severe pains in the chest. At seven o'clock in the evening, the case terminated in death, which was perfectly tranquil. On the morning of the 26th an examination of the body was made. The brain was pale, bloodless, and softer than natural; the ventricles contained a minimum quantity of serum; the sinuses were distended with dark fluid blood. The lungs were of a dark red colour; in the right were many patches of blood-extravasation; the sub-pleural cellular tissue had numerous ecchymoses, and the cellular tissue of mediastinum presented the same appearances. In the pleuræ there was much bloody serum. The pericardium contained a little reddish serum; the heart was soft, the left ventricle empty, the right ventricle and the great veins contained much blood, partly in a state of loose coagulation, and partly fluid. The liver was to some extent enlarged, fatty, and perfectly bloodless. In the stomach there was some greenish fluid, with white flakes; and to the surface of the lining membrane much thick mucus adhered. With the exception of the fundus of the stomach, which was somewhat hyperæmic, the interior of this viscus did not exhibit any abnormal appearance. The mucous membrane of the œsophagus and pharynx was normal; that of the duodenum resembled the stomach. Along the course of the intestines, in many situations, the subperitoneal cellular tissue presented patches of ecchymosis. The small and large intestines did not contain anything unusual; in both there was a moderate quantity of yellow feces. The spleen was bloodless; the cortical substance of the kidneys was granular. The Malpighian corpuscles presented a beautiful appearance, and resembled red points. On a microscopic examination the rete-mirabile Malpighianum was found injected, and the uriniferous tubuli blocked up with exudation matter. The mucous membrane of the pelvis of the kidney presented some spots of ecchymosis. In the urinary bladder, which was contracted, a little cloudy urine was found. The stomach and a portion of intestines, with their contents, were conveyed to the laboratory of the "Josephs-Academie," where a chemical examination was instituted, but without succeeding in discovering the presence of phosphorus. There was no smell of phosphorus from the body, and it may be observed that neither on the body during life, nor after death, was there any appearance of phosphorescence.

The narrator of this most important case of poisoning by phosphorus, regrets that, owing to the pressure of business, in a great hospital, it was found impossible to carry out as minute an examination as might have been desirable, particularly in a chemical point of view; but he deems the publication of the case valuable, as giving an accurate detail of the symptoms observed during life, and also of the *post-mortem* appearances, as such erroneous views prevail as to the effects of phosphorus on the system.

The most important results of the examination were, on the positive side, the signs of general deterioration of the blood; and, on the negative side, the absence of lesion of the stomach.

This case proves that phosphorus does not always at least produce a local action in its poisonous influence, as is almost generally believed; for, during life, in this example, there was no marked symptom of gastritis or gastro-enteritis present; nor, after death, were there found signs of inflammation, ulceration, or gangrene of the pharynx, œsophagus, stomach, or intestinal tube —appearances recorded in most text-books, as found in cases of poisoning by phosphorus. The poison in the case now recorded seems to have exercised a general or constitutional influence, and the blood and the nervous system suffered chiefly, as evidenced by the symptoms and morbid appearances—the pain in the breast and hypochondria; the state of vision, and the evolution of phosphorus by the sweat, are worthy of remark. With respect to the existence of albumen in the urine, and the signs of commencing Bright's disease, it is not likely that this condition was present before the reception of the phosphorus; for we find that the patient's health was excellent. It is much more probable that the lesion of the kidney was produced directly by the poison, for the same has been observed in instances of poisoning by other agents, and, moreover, it should be remembered how much the kidneys are exposed to injurious influences in the separation of noxious materials from the system. As to the duration of the case (something over four days) it is to be observed, that this is longer than that of previously reported cases; but it must be remembered that a great quantity of the phosphorus matches was rejected by vomiting, and that the poison was in the solid form, and covered with an envelop of gum. The fact of phosphorus not being detected after death, may be accounted for by the duration of the case, by the phosphorus remaining in the stomach being partly absorbed, and partly oxidized, and by the change which it underwent from the moment of death to the period of the examination.

It only remains to be mentioned, that the symptoms which are stated in different works to have been observed as the effect of phosphorus, and evidencing its stimulating or exciting property, such as erections, priapism, strangury, &c. &c., were not observed in the case which forms the subject of the present communication.—*Dublin Hospital Gazette*, Aug. 15, 1857, from *Zeitschrift der k. k. Gesellschaft der Aerzte zu Wien.*

# AMERICAN INTELLIGENCE.

## ORIGINAL COMMUNICATIONS.

*Encephaloid Tumour weighing ten pounds involving the Right Kidney of a Boy four years old.* By M. Shepherd, M. D., of Payson, Ill.—On the night of the 19th of January, 1857, I was called to see Charley, a boy four years old, the son of healthy, robust parents, each of whom will weigh as much as two hundred pounds. The father is a farmer of middle age. Charley is the youngest of five healthy children, and with the exception of a protracted illness from cholera infantum when he was a year old, has enjoyed good health and is well grown. During the month of October last, he was noticed, occasionally, to spit or vomit up his food soon after eating. Their family physician was consulted, who stated that it was a slight dyspeptic attack that would, doubtless, soon pass off without medication. Early in the winter his parents observed a tumid state of the abdomen, and, as is common in the country under such circumstances, administered some domestic anthelmintic, believing the tumidity to be occasioned by worms. There was no complaint on Charley's part up to this time, and he still indulged freely at the table, but frequently rejected a portion of the amount taken.

For several days before I visited him he had had high fever, with a coated tongue, thirst, constipation, and complained of pain in the abdomen. The marked fulness of that region soon directed my attention particularly to an examination of its various organs. I found the right side was occupied by an unnatural growth, which extended from the diaphragm to Poupart's ligament, and laterally to the umbilicus. From the latter point to within a short distance of the symphysis pubis the bounds of this growth were very distinct, and the fingers could be pressed beneath its rounded edge. This resembled so much the lobe of an enlarged liver that, in giving my opinion to the parents, I located the disease in that organ, and added that if it should prove to be so, in all probability, such an enlargement was without a precedent. My prognosis, of course, was unfavourable. The treatment for the night consisted in fomentation to the affected side, and 3 grs. cal. and 1 gr. of ipec. once in three hours, until three doses were taken, and the whole to be moved off with ol. ricini the next morning. The next day I found him with less fever, but a good deal of tenderness in the region of the liver. Applied epispast. over the entire diseased side, and ordered the same amount of calomel and ipecac. for the following night. In a few days, Charley was up and running about as usual, but without any abatement of the fulness of the abdomen.

I did not see him after the 13th until the 30th of January. There was no particular change during this time, the abdomen a little more prominent, and in consequence less inclination to exercise; lies in his cradle part of the time; appetite good; bowels regular; tongue clean; pulse 140; respirations hurried. Gave iodid. potass. in syrup.

Feb. 6th was called again; found him more feeble; confined most of the time; still rejects a portion of his food. At my request, another physician was invited to see the case with me. He was equally confident, with myself, that we had an enlarged liver to treat, and proposed iodid. ferri and other tonics. Within a few days the boy rejected all of the medicine administered to him. Finding it impossible to gain anything by medication, our remedies were discontinued. The parents of the boy being in rather indigent circumstances, I proposed to make regular, but gratuitous visits, in order that I might witness the progress of the disease. In a short time, I invited another intelligent physician of our village to see the boy. His view of the case coincided with my own, together with the consulting physician before alluded to. In fact, it appeared as if the liver was the only organ that could occupy and take complete possession of the right hypochondriac and iliac regions, as they were occupied in this case.

The boy lay most of the time on his back, slightly inclined to the right; but for some weeks before his death he would ask to be shifted from one side to the other every few minutes, and his cradle was kept in perpetual motion day and night. The last two months of his life his appetite was good, almost ravenous at times, while his stomach retained and perfectly digested all that he took into it. His tongue was clean, and his bowels had spontaneous evacuations daily. Within the above specified time he lost control, partially at first, but finally completely, of his urinary organs, so that that fluid was discharged guttatim. This was the first evidence we had of any derangement of these organs, and it was accounted for, in part, by mechanical displacement and pressure upon the organs concerned in its elimination. Notwithstanding his good appetite and digestion, his freedom from any perceptible exhausting influence, he steadily became more and more emaciated, until there was scarcely a muscular fibre remaining, and nothing but attenuated skin to cover his bones. He died April 30th.

*Post-mortem* 14 hours after death, conducted by Dr. Kendall, in presence of other physicians. On opening the abdomen, contrary to our expectation, a tumour, shaped very much like the stomach of the hog, somewhat longer, and about the same colour, forced itself partly through the opening. It was uniformly attached both to the right and posterior wall of the abdomen, from the pubis to the diaphragm. Anteriorly, it involved within its investing membrane almost the whole of the ascending colon. On the left side of the tumour, along the entire length, the ilium was attached. Posteriorly, the aorta and vena cava were involved together with the right kidney.

This tumour, notwithstanding the delicacy of its external covering, was removed entire, and weighed *fully ten pounds!* A heterologous monster of this size in the abdomen of a boy four years old, of course would displace every organ contained in it. The liver was compressed to its smallest dimensions against the diaphragm on the right, while the stomach was forced into the extreme left hypochondriac region. The spleen, pancreas, and small intestines occupied the left also. We were restricted as to the extent of our examination, and could not carry it further. The tumour was conveyed to town, where we examined it at our leisure. It was opened in presence of Drs. Bane, Reynolds, and Kay, and contained the right kidney almost entirely transformed into purely white lobules of soft medullary matter which surrounded it. There was no blood, and but few bloodvessels in this deposit. The covering of this mass was so unlike any of the contiguous structures where it had its origin that we feel it could not have been derived from them, but was doubtless a new formation. From the hasty examination of other organs within the abdomen, we feel satisfied that a similar deposit did not exist in or about any of them.

PAYSON, *Ill.*, Aug. 27, 1857.

*Case of Compound Fracture of the Skull, with Laceration and Loss of a Portion of Brain. Recovery.* By D. J. McRae, M. D., of Sumpter Dist., S. C.—Sharper, æt. 13, slave, good constitution, on June 25th, 1857, at 9 A. M., about nine hours previous to our seeing him had received, by the fall of a tree, a severe blow on the right side of the head, nearly parallel to the coronel suture, producing a lacerated wound of about one inch in length, through which blood and brain were oozing out. Enlarged the wound by incisions; found a compound fracture of the skull, about three inches in length, on the anterior portion of the right parietal bone, continuous with the coronal suture, one inch from the sagittal. A portion of the bone was broken in causing compression of the brain. Removed two pieces of bone, which were almost separated from their membranes, leaving a cavity in cranium three inches in length by one inch in the widest place, of an oblong triangular form. The membranes of the brain were torn about two inches in length; the brain was lacerated, and a considerable portion of it destroyed. The patient was entirely insensible; collapsed and showed symptoms of compression of the brain. Slow, laboured pulse. There was complete hemiplegia of the left side, convulsions, and contraction of the pupils.

His head was shaved, the wound closed by stitches and adhesive strips, free vent being allowed for any matter to escape, and cold applied; counter-irritation to feet and legs. Could not see the patient before two days; gave orders to keep the head cool by large wet cloths constantly applied, and to have the bowels freely opened with magnes. sulph.

*July* 28. Pulse 50, full; skin hot and dry; inclined to be comatose; insensibility and paralysis increased. Bled him to ℥xij, after which the pulse increased in frequency. Wound healing kindly.

29*th.* All the symptoms a little improved, and notices when spoken to. From this time he gradually improved. Cold wet cloths were continued to the head and wound until it entirely healed; a very light diet and simple cathartics to keep the bowels open freely were directed.

*Aug.* 20. He is entirely restored, with the exception of slight paralysis, which is gradually diminishing.

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*Confection of Cinchona as an Antiperiodic.* By D. S. Gloninger, M. D.—I would recommend to the profession the "confection of cinchona" (made of the Calisaya bark), as one of our most efficient antiperiodics, and greatly superior to the many alkaloids now in use in the treatment of intermittent fever. It sits well upon the stomach, does not produce the unpleasant cinchonism often complained of from sulph. quinia, &c., and comprises *all the powers* of the cinchona, gratefully disguised, and in such a concentrated form that the dose is *too small* even to be ungrateful to the most delicate stomach. I speak from personal experience, having laboured under intermittent at least during the space of a year, the disease relapsing every third week. The alkaloids were all employed, but with no satisfactory results towards a permanent eradication of the disease. I was induced by my friend, F. L. John, Pharmaceutist of this city, to use the confection, the formula of which has been kindly furnished by him, and which is appended to this article; and so beneficial did it prove that the writer has ever since used it as a substitute for all other antiperiodics, and with great satisfaction to himself and patients.

Its tonic properties will apply excellently to the convalescence from fevers, where heretofore we have used Huxham's tinct., wine of wild cherry, &c., and with this in its favour, that there is so little danger from taking "too much for the stomach's sake," so much to be deprecated in the indiscriminate use of all alcoholic tinctures.

I feel justified in saying, that if the confection receives a trial by the medical profession, and their experience corresponds with my own, that it will soon supersede all other antiperiodics now in use.

The following is the formula as furnished by F. L. John, Race St., viz:—

*Confectio Cinchonæ.*—Cort. cinchon. calis. pulv.; confect. sennæ, āā ℥j; ammon. murias ʒss; syr. cort. aurant. ℥ij; m. f. confect. Dose, the size of a shellbark, three times a day.

*Case of Monstrosity.* By Jno. H. Hunter, M. D., of Kanawha C. H., Va.—I send the following description of a "monster" which I assisted into the world a few days since. The mother had been suffering for three days previous to the time I was called with false pains. I found her much exhausted, and deeming it expedient to hasten the labour, immediately administered ergot. In three hours the head and shoulders were delivered—to my surprise the rest of the body was retained for an hour and a half longer; but upon seeing the infant, the cause of the detention was obvious.

Its head was small and cylindrical in shape; face well formed, with the exception of the nose, which was represented by a piece of integument of the size of my little finger-nail; abdomen very large, and filled with serum, amounting to at least two gallons, which exuded from it when the cord, which was very weak, and peeled off from its attachment to the abdomen, was ruptured; its legs were *behind*, on either side of the sacrum, and about half an inch apart. But I think the strangest thing about this "freak of nature" was the entire absence of any genital organs, unless two little prominences, about the size of a pin's head, were rudimentary testicles. There was a very small aperture, which I suppose was the anus; the cord was very frail, and ruptured at both ends, which caused much difficulty in delivering the placenta. The child had been dead about twenty-four hours; mother was about seventeen, and had been married two years. Primipara.

## DOMESTIC SUMMARY.

*Fracture of the Neck of the Femur; Bony Union.*—Dr. Gay presented to the Buffalo Medical Association (Sept. 1, 1857) a beautiful specimen of fracture of the neck of the femur with complete bony union. Dr. G. stated that he was indebted to Dr. Bissel, of this city, for the specimen. The person from whom it was taken was a female, æt. 62 years, residing in this county, the mother of Dr. B——. The fracture occurred from a fall on the hip; Dr. G. was not positive, however, in regard to the nature of the fall. The limb was dressed, splints being applied; these were removed in a short time; and in a few months she regained the use of the limb. Previous to the accident, she had been labouring under an attack of tuberculosis pulmonalis; during the time she was being treated for the fracture, her health improved very much; but she died about four years after she had recovered the use of the limb, from consumption.

Prof. Hamilton remarked that the specimen was an interesting one; the capsule was present (although dry), which he had not often seen in the specimens of this fracture which he had examined. Though this might be a fracture within the capsule, as was supposed by Dr. Gay, yet it lacked the *positive evidence* of such a fracture. Prof. H. had never seen a specimen of fracture within the capsule, with bony union, which has entirely satisfied him. For several reasons, he is led to think that this specimen is not one of fracture within the capsule. First, a fall on the foot would have been much more likely to have produced such a fracture than a fall—as in the present instance—on the hip. Next, although the capsule was attached, yet he was unable to determine that the line of fracture was within the capsule entirely; he could not see the line of fracture even. Furthermore, the neck of the femur was gone, except about one-quarter of an inch above. He could not positively state where the line of fracture was, possibly it might have been across the trochanter major; the direction of the injury would tend to confirm this view. He further stated that the bone was united completely by bone. The shaft was fairly *within* the head of the bone. How did it get there? Not by direct injury. The shaft was sent into the neck immediately; absorption of the neck then took place, leaving the shaft in the head. He could think of no other explanation. The specimen was a very interesting one; there was complete bony union. Yet it lacked the positive evidences of fracture within the capsule.—*Buffalo Med. Journ.*, Oct. 1857.

*Disarticulation and Removal of nearly the Lateral Half of the Lower Jaw.*—Dr. C. E. Isaacs reports (*New York Journ. of Med.*, May, 1857) a case in which he performed this operation. The most interesting points in the history of this case are:—

1. The extirpation of the jaw without ligature either of the common or external carotid.
2. The restoration of the function of the divided branches of the portio dura.
3. The removal of the masseter muscle, and the tracing of the cancerous deposit from its internal, to its gradual disappearance near its outer surface, thus showing the necessity of complete extirpation of all suspected parts.
4. The fact of the non-recurrence thus far of a disease which, as viewed both by the naked eye and through the microscope, was undoubtedly of a cancerous character.

*Simultaneous Dislocation of both Shoulder-Joints.*—An example of this rare accident is recorded (*New York Journ. Med.*, Nov., 1857) by Dr. Wm. H. Van Buren. It occurred in a well-built man, and was produced by a headlong fall down a flight of steps. Death ensued in five hours from fracture through the base of the skull with intercranial hemorrhage and laceration of cerebellum.

*Anomalous Situation of the Left Kidney.*—Dr. C. E. Isaacs, in making the post-mortem of a negro who had died of phthisis, found the left kidney in the cavity of the pelvis. Its superior extremity was in contact with the bifurcation of the abdominal aorta. The inferior touched the posterior surface of the bladder. The upper surface of the kidney was crossed by the sigmoid flexure of the colon. The inferior surface reposed upon the left common iliac artery and vein, upon the left internal, and the left external iliac artery, and the corresponding veins; also upon the fifth lumbar vertebra, and the first, second and third pieces of the sacrum—cellular tissue and vessels intervening.

The right edge of the kidney was in contact with the rectum—the left with the iliac portion of the brim of the pelvis.

There were three renal arteries, one of the size of a crow's quill, coming off from the abdominal aorta, the others were branches of the right common iliac, and were about the size of the radial arteries.

The renal vein entered the vena cava, at the point of its formation, by the two common iliac veins. The kidney was of the ordinary size. The left supra-renal capsule was twice as large as usual, and of the shape of a fig leaf. It occupied its normal position in the lumbar region.

The right kidney was somewhat larger, and situated rather lower down than usual.—*New York Journ. of Med.*, Nov., 1847.

*Gun-shot Wound of Bladder; Recovery.*—Dr. Robert H. Grinstead records (*St. Louis Med. and Surg. Journ.*, Nov. 1857) an interesting case of this. The subject of it was a delicate lad, 17 years of age, accidentally shot on the morning of the 4th July, 1857. The ball, which was discharged from a pistol, entered in the hypogastric region a few lines to the left of the median line, and about half an inch above the symphysis pubis, passed through the bladder, downward and outward through the great sacro-ischiatic notch; and was extracted from a point upon a line with the extremity of the coccyx, and about two inches above the anus.

The bladder is known to have been in a state of distension at the time of the accident. The boy was seated on the ground about five paces from the gentleman who had the pistol in his hand, and they were almost directly facing each other.

When seen by Dr. G., seven hours after the accident, he was suffering intense pain, and the urine was escaping profusely through the anterior wound. By appropriate treatment, the wound closed in a little over two weeks, and by the 18th day he passed his urine by the urethra easily and naturally, and was discharged as not requiring further treatment.

*Chlorate of Potash in Stomatitis Materna.*—Dr. L. Faulkner extols (*Virginia Medical Journal*, Dec. 1857) the chlorate of potash as a remedy in stomatitis materna.

*Iodide of Potassium in Leucorrhœa.*—Dr. Jos. B. Payne, of Magnolia, Ark., recommends (*New Orleans Med. and Surg. Journ.*, Nov. 1857) the iodide of potassium in solution as an *injection* in leucorrhœa. He employs the solution of the strength of one drachm and a half of the salt to a pint of water, three or four times a day.

*Application to Sore Nipples.*—It is stated (*Boston Med. and Surg. Journ.*, Oct. 1, 1857) that equal parts (by weight) of glycerine and tannin is an admirable application to sore nipples, and also to chaps and excoriations of other parts. The tannin readily dissolves in the glycerine.

*Statistical Table exhibiting the Mean Height of American Recruits.*—The following, extracted from Surgeon General Thos. Lawson's report, exhibits the mean height of 1800 men taken as they were entered upon the recruit list filed in the Adjutant General's office. The results are given for 100 men from each State. No recruit under 5 ft. 5 in. is received.

| State. | Mean height. *Feet.* | Six feet and over. | Greatest height. *Ft. In.* |
|---|---|---|---|
| Indiana | 5.7604 | 18 | 6.4¼ |
| Kentucky | 5.7729 | 18 | 6.3¾ |
| Ohio | 5.7537 | 15 | 6.3½ |
| Tennessee | 5.7779 | 18 | 6.3 |
| Maine | 5.7314 | 11 | 6.2 |
| Vermont and New Hampshire | 5.6951 | 6 | 6.1 |
| Massachusetts and Connecticut | 5.6821 | 5 | 6.3 |
| North Carolina | 5.7814 | 24 | 6.3¾ |
| Georgia | 5.8272 | 30 | 6.6½ |
| South Carolina | 5.7729 | 15 | 6.4½ |
| Alabama | 5.7647 | 17 | 6.4 |
| Virginia | 5.7488 | 15 | 6.2 |
| New York | 5.6505 | 4 | 6.1½ |
| Pennsylvania | 5.6756 | 5 | 6.1 |
| New Jersey and Delaware | 5.6509 | 6 | 6.1 |
| Maryland | 5.7130 | 9 | 6.2 |
| Illinois | 5.7696 | 17 | 6.3 |
| Missouri | 5.7162 | 8 | 6.1½ |

*Ovariotomy.*—Dr. Gay read before the Boston Society for Medical Improvement (*Boston Med. and Surg. Journ.*, March 19th, 1857), a case of ovarian cyst, in a woman 54 years of age, in which he performed ovariotomy. The patient died seventy-four hours after the operation.

THE

# AMERICAN JOURNAL

# OF THE MEDICAL SCIENCES

FOR APRIL 1858.

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## *TO READERS AND CORRESPONDENTS.*

We take pleasure in acknowledging our indebtedness to Prof. L. M. Lawson, of Cincinnati, for his kindness in calling our attention to an error, on p. 200 of our last No., in the formula for the administration of Norwood's Tincture of Veratrum Viride in pneumonia. According to the formula there given, the dose of the tincture is eight times as much as intended, which would not be a safe dose. The correct formula, as given by Dr. Jameson, is:—

℞—Tinct. verat. virid. (Norwood's) fʒj;
Nit. potass. pur. ʒj;
Aq. puræ ℥j.—M.

Of this the dose is a teaspoonful every four hours.

We have on hand a number of communications, which shall receive early attention.

The following works have been received:—

Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. Volume the fortieth. London, 1857. (From the Society.)

The Enlarged Prostate, its Pathology and Treatment; with Observations on the Relation of this Complaint to Stone in the Bladder. By Henry Thompson, F. R. C. S., Assistant Surgeon to University College Hospital, &c. &c. London: John Churchill, 1858. (From the Publisher.)

The Hygiene of the Turkish Army. By J. N. Radcliffe, M. R. C. S., Late of the Staff of Omar Pasha. London: John Churchill, 1858. (From the Author.)

On Consumption: Its Nature, Symptoms, and Treatment. An Essay to which was awarded the Fothergellian Gold Medal of the Medical Society of London. By Richard Payne Cotton, M. D. Second edition. London: John Churchill, 1858. (From the Author.)

The Physiology and Treatment of Placenta Prævia; being the Lettsomian Lectures on Midwifery for 1857. By Robert Barnes, M. D., F. R. S., &c. London: John Churchill, 1858. (From the Publisher.)

A Manual of Medical Diagnosis: being an Analysis of the Signs and Symptoms of Disease. By A. W. Barclay, M. D., F. R. C. P., Assistant Physician to St. George's Hospital. Philadelphia: Blanchard & Lea, 1858. (From the Publishers.)

Plates Illustrative of Wilson on Diseases of the Skin. Fourth edition. Philadelphia: Blanchard & Lea, 1857. (From the Publishers.)

The Dispensatory of the United States of America. By Geo. B. Wood, M. D., Prof. of Theory and Practice of Medicine in the University of Pennsylvania, etc. etc., and Franklin Bache, M. D., Prof. of Chemistry in Jefferson Medical College of Philadelphia. Eleventh edition, carefully revised. Philadelphia: J. B. Lippincott & Co., 1858.

Introduction to Structural and Systematic Botany and Vegetable Physiology. Being a fifth and revised edition of the Botanical Text-Book. Illustrated with over 1300 wood cuts. By Asa Gray, M. D., Fisher Professor of Natural History in Harvard University. New York: Ivison & Phinney, 1858. (From the Publishers.)

Biography of Elisha Kent Kane. By Dr. Wm. Elder. Philadelphia: Childs & Peterson, 1857. (From the Author.)

Contributions to the American Medical Association. Essays on the Secretory and the Excito-Secretory System of Nerves in their Relations to Physiology and Pathology. By Henry Fraser Campbell, M. D., Prof. of Anatomy in the

Medical College of Georgia. With Illustrations. Philadelphia: J. B. Lippincott & Co., 1857. (From the Author.)

Robertson's Case of Jacksonville Fever. Charleston, 1857. (From the Author.)

A Brief Description of the Yellow Fever as it prevailed at Mount Pleasant, and in Charleston Harbour, during the summer of 1857. By R. A. Kinlock, M. D. Charleston, 1858. (From the Author.)

Medical Opinion in the Parish Will Case. By Pliny Earle, M. D. New York, 1857. (From the Author.)

A History, Chronological and Circumstantial of the Visitations of Yellow Fever at New York. By John H. Griscom, M. D., Physician to the New York Hospital, Fellow of the New York Academy of Medicine. New York, 1858. (From the Author.)

The Transactions of the Belmont Medical Society for 1856–7. Bridgeport, Ohio, 1858.

An Address delivered before the Graduating Class of the Dartmouth Medical College, at Hanover, N. H., Nov. 11th, 1857. By George H. Hubbard, M. D. Manchester, 1857. (From the Author.)

New York Academy of Medicine. Discussion on Puerperal Fever. Remark by Dr. Baker. New York, 1857. (From the Author.)

An Address on Scientific and Practical Medicine, delivered before the Medical Class, Nov., 1857. By A. H. Buchanan, M. D., Prof. Physiology and Surgical Anatomy in University, Nashville. Nashville, 1857. (From the Author.)

Hahnemann and Paracelsus. On some Ancient Medical Delusions, and their Connection with Errors still Existing. An Address delivered before the Norfolk District Medical Society, Nov. 11, 1857. By Henry A. Martin, M. D., (of Roxbury). Boston, 1857. (From the Author.)

An Essay on the Position and Duties of the Medical Profession in the Middle of the Nineteenth Century. By Charles E. Johnson, M. D., of Raleigh, N. C. Raleigh, 1858. (From the Author.)

An Address read before the Esculapian Society of the Wabash Valley, held at Paris, Illinois, on the 29th of October, 1857. By E. Read, M. D., of Terre Haute, Indiana. Chicago, 1858. (From the Author.)

Nineteenth Annual Report of the Board of Trustees and Officers of the Central Ohio Lunatic Asylum, to the Governor of Ohio, for the year 1857. Columbus, 1858. (From Dr. R. Hills.)

Twenty-first Annual Report of the Trustees and Superintendent of the Vermont Asylum for the Insane, August, 1857. Brattleboro, 1857.

Report of the Board of Managers of the Eastern Lunatic Asylum (at Lexington) for the years 1856–7. Frankfort, Kentucky, 1858.

First Semi-Annual Report of the Superintendent of the Lunatic Asylum of the State of Texas. Rendered Nov. 27, 1857. Austin, 1858.

Report of the Trustees and Superintendent of the State Lunatic Asylum of Pennsylvania, 1857. Harrisburg, 1858.

Report of the Pennsylvania Hospital for the Insane, for the year 1857. By Thomas S. Kirkbride, M. D., Physician to the Institution. Published by order of the Board of Managers. Philadelphia, 1858.

Constitution, By-Laws, and Code of Ethics of the North Mississippi Medical Society. Adopted, May, 1856. Aberdeen, 1856.

An Introductory Lecture to the Course of Instruction in the Medical Department of the University of Vermont. By R. Cresson Styles, M. D., Prof. Physiology and Pathology, Feb. 1858. Burlington, 1858. (From the Author.)

Fifth Annual Report of the Surgeons of the New York Ophthalmic Hospital at No. 6 Stuyvesant Place, near Ninth Street. With an Address. By Mark Stephenson, M. D., to the Graduating Class of 1857. Subject—Law and Medicine Contrasted. New York, 1858. (From the Surgeons.)

Report of the Board of Inspectors of the Western Penitentiary of Pennsylvania, for 1857. Pittsburg, 1858. (From D. Pollock.)

A Report on Diseases of the Cervix Uteri; read before the Medical Society of the State of Georgia, at the Annual Meeting in Augusta, April, 1857. With

Additional Notes. By Joseph A. Eve, M. D., Prof. Obstetrics, &c., in Medical College Georgia. Augusta, 1858. (From the Author.)

Ethnology of the Negro or Prognathous Race. A Lecture delivered Nov. 30th, 1857, before the New Orleans Academy of Science. By Samuel A. Cartwright, M. D. New Orleans, 1858. (From the Author.)

Silver Sutures in Surgery. The Anniversary Discourse before the New York Academy of Medicine, delivered Nov. 18th, 1857. By J. Marion Sims, M. D., Surgeon to the Woman's Hospital. Published by the Academy. New York, 1858. (From the Author.)

The following Journals have been received in exchange:—

Annales Médico-Psychologiques. Journal destiné à recueillir tous les documents relatifs à l'Aliénation Mentale, aux nevroses, et à la Médecine Légale des Aliénés. Par MM. les Docteurs Baillarger, Cerise et Moreau. October, 1857. January, 1858.

Le Moniteur des Hôpitaux Revue Médico-Chirurgicale de Paris. Redacteur en chef, M. H. De Castelnau. Dec. 1857. Jan., Feb., March, 1858.

L'Art Dentaire. Revue Mensuelle de la Chirurgie et de la Prothèse Dentaires. Par MM. Fowler et Preterre, Dentistes Américains à Paris. Dec. 1857.

Journal de Médecine de Bordeaux. Redacteur en chef, M. Costes. Jan., 1858.

Journal de la Physiologie de l'Homme et des Animaux. Publié sous la direction de Docteur E. Brown-Séquard. Jan., 1858.

British Medical Journal. Edited by Andrew Winter, M. D. Dec., 1857. January, February, March, 1858.

British and Foreign Medico-Chirurgical Review. January, 1858.

The Liverpool Medico-Chirurgical Journal. January, 1858.

The Half Yearly Abstract of the Medical Sciences. Edited by W. H. Ranking, M. D., and C. B. Radcliffe, M. D. July, December, 1857.

Edinburgh Medical Journal. January, February, 1858.

The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D. January, 1858.

The Sanitary Review and Journal of Public Health. Edited by Benj. W. Richardson, M. D. January, 1858.

The Retrospect of Medicine, being a half-yearly Journal. Edited by W. Braithwaite. July, December, 1857.

The Midland Quarterly Journal of the Medical Sciences. January, 1858.

The Glasgow Medical Journal. January, 1858.

The Dublin Hospital Gazette. January, February, 1858.

The Dublin Quarterly Journal of Medical Science. February, 1858.

The Medical Chronicle and Montreal Monthly Journal of Medicine and Surgery. Edited by Dr. W. Wright and D. C. MacCallum. January, February, March, 1858.

Charleston Medical Journal and Review. Editor, J. Dickson Bruns, M. D. January, March, 1858.

Boston Medical and Surgical Journal. Edited by W. W. Morland, M. D., and Francis Minot, M. D. January, February, March, 1858.

The Ohio Medical and Surgical Journal. Edited by John Dawson, M. D. January, March, 1858.

Southern Medical and Surgical Journal. Edited by Henry F. Campbell, M. D., and Robert Campbell, M. D. January, February, March, 1858.

The New Orleans Medical and Surgical Journal. Edited by Bennet Dowler, M. D. January, March, 1858.

New Orleans Medical News and Hospital Gazette. Edited by Warren Brickell, M. D., and E. D. Fenner, M. D. January, February, March, 1858.

The North American Medico-Chirurgical Review. Edited by S. D. Gross, M. D., and T. G. Richardson, M. D. January, March, 1858.

The American Journal of Dental Science. Edited by Chapin Harris, M. D., D. D. S., and A. S. Peggot, M. D. January, 1858.

Buffalo Medical Journal. Edited by Sanford B. Hunt, M. D., and Austin Flint, Jr., M. D. January, February, March, 1858.

The New York Journal of Medicine. Edited by Stephen Smith, M. D. January, March, 1858.

The Virginia Medical Journal. Edited by Drs. McCaw and Otis. January, February, March, 1858.

The New Hampshire Journal of Medicine. Edited by Geo. H. Hubbard, M. D. January, February, March, 1858.

Nashville Journal of Medicine and Surgery. Edited by Drs. Bowling, Foster, and Blackie. January, February, March, 1858.

The Peninsular Journal of Medicine. Edited by Drs. Pitcher, Palmer, Brodie and Christian. January, February, 1858.

The American Journal of Science and the Arts. Edited by Professor B. Silliman, B. Silliman, Jr., and J. D. Dana. January, March, 1858.

Atlanta Medical and Surgical Journal. Edited by Jos. P. Logan, M. D., and W. F. Westmoreland, M. D. January, February, 1858.

The Medical and Surgical Reporter. Edited by S. W. Butler, M. D. January, February, March, 1858.

Cincinnati Lancet and Observer. Edited by Drs. G. Mendenhall, J. A. Murphy and E. B. Stevens. January, March, 1858.

Iowa Medical Journal. Edited by J. C. Hughes, M. D., and W. R. Marsh, M. D. January, February, March, 1858.

The American Journal of Insanity. January, 1858.

The Chicago Medical Journal. Edited by N. S. Davis, M. D., and W. H. Byford, M. D. January, February, 1858.

St. Louis Medical and Surgical Journal. Edited by M. L. Linton, M. D., and W. M. McPheeters, M. D. January, 1858.

The Pacific Medical and Surgical Journal. Edited by John B. Trask, M. D., and David Wooster, M. D. February, 1858.

The American Journal of Pharmacy. Published by Authority of the Philadelphia College of Pharmacy. Edited by William Procter, Jr., Professor of Pharmacy in Philadelphia College of Pharmacy. March, 1858.

Communications intended for publication, and Books for Review, should be sent, *free of expense*, directed to Isaac Hays, M. D., Editor of the American Journal of the Medical Sciences, care of Messrs. Blanchard & Lea, Philadelphia. Parcels directed as above, and (carriage paid) under cover, to John Miller, Henrietta Street, Covent Garden, *London;* or M. Hector Bossange, Lib. quai Voltaire, No. 11, *Paris*, will reach us safely and without delay. We particularly request the attention of our foreign correspondents to the above, as we are often subjected to unnecessary expense for postage and carriage.

Private communications to the Editor, may be addressed to his residence, 1525 Locust St.

All remittances of money, and letters on the *business* of the Journal, should be addressed *exclusively* to the publishers, Messrs. Blanchard & Lea.

☞ The advertisement-sheet belongs to the business department of the Journal, and all communications for it should be made to the publishers.

To secure insertion, all advertisements should be received by the 20th of the previous month.

# CONTENTS
OF THE
# AMERICAN JOURNAL
OF THE
# MEDICAL SCIENCES.

## NO. LXX. NEW SERIES.

APRIL, 1858.

---

## MEMOIRS AND CASES.

ART. PAGE

I. The Influence of the Placenta upon the Development of the Uterus during Pregnancy. By William Read, M. D., formerly Physician to the Boston Lying-in Hospital. (Read before the Boston Society for Medical Improvement, Dec. 28, 1857.) - - - - - - - - - - - - 309

II. On the Alterations induced by Intermittent Fever in the Physical and Chemical Qualities of the Urine, and on the Action of the Disulphate of Quinine. By William A. Hammond, M. D., Assist. Surg. U. S. A. (Read before the Biological Society of Philadelphia, February 15, 1858.) 322

III. On the Use of Iron. By Isaac Casselberry, M. D., Evansville, Ind. 327

IV. Glycerine as a Local Application in Pseudo-Membranous Croup. By E. R. Mayer, M. D., of Wilkesbarre, Pa. - - - - - - - - 338

V. On the Local Application of Belladonna with Mercurial Ointment in the Treatment of Croup. By John D. Shelton, M. D., of Jamaica, Queen's County, New York. - - - - - - - - - - - 340

VI. Report of Cases treated at the Surgical Clinic of the University of Pennsylvania. By J. J. Woodward, M. D., of Philadelphia, Assistant to the Surgical Clinic. - - - - - - - - - - - - 344

VII. Medical and Surgical Notes of Campaigns in the War with Mexico, during the years 1845, 1846, 1847, and 1848. By John B. Porter, M. D., Surgeon U. S. Army - - - - - - - - - - - 347

VIII. Case of Fracture of the Clavicle and Humerus of the same Side. By B. F. Schneck, M. D., of Lebanon, Pennsylvania. - - - - 352

IX. Resection of the Femur, and Removal of the Trochanter Major for the formation of an Artificial Hip-Joint. By A. G. Walter, Surgeon, Pittsburg, Pa. - - - - - - - - - - - - - - - 354

X. Resection of the Lower Jaw for Necrosis caused by Inhalation of the Fumes of Phosphorus. By Wm. S. Halsey, M. D., Prof. of Surgery in the Philadelphia College of Medicine. - - - - - - - - - 356

XI. Case of Somnambulism. By Robert M. Stribling, M. D., of Virginia 360

XII. Exsection of the Entire Radius. By J. M. Carnochan, Professor of Surgery in the New York Medical College, Surgeon-in-Chief to the State Hospital (New York), etc. With a wood-cut. - - - - - - 363

XIII. Account of a Monster of the Genus Peracephalus. By Walter F. Atlee, M. D. (Read before the Biological Society of Philadelphia, March 1, 1858.) - - - - - - - - - - - - - - 370

ART. PAGE
XIV. Spontaneous Rupture of the Eye. By Andrew Fleming, M. D., late Resident Physician to the Pennsylvania Hospital. - - - - - 373
XV. Experiments with Bibron's Antidote to the Poison of the Rattlesnake. By Louis de Vesey, Member of the Academy of Natural Sciences of Philadelphia. - - - - - - - - - - - - 376

## TRANSACTIONS OF SOCIETIES.

XVI. Summary of the Transactions of the College of Physicians of Philadelphia. - - - - - - - - - - - - 377
  1. Injurious Effect upon the Eye of the Light from the Fish-tail Burner. By Dr. B. H. Rand. - - - - - - - - 377
  Fatal Enlargement of the Thymus Gland with Subjacent Tumour. By Dr. Henry Hartshorne. - - - - - - - - 378
  Congenital Malposition of the Liver. By Dr. J. C. Morris. - - 380
  Foreign Body in the Lungs. By Dr. G. B. Wood. - - - - 380
  Chronic Disease of the Urinary Organs characterized by Anomalous Symptoms. By Dr. O. J. Wister. - - - - - - - 382
  Fatal Disease of the Appendix Vermiformis. By Dr. Caspar Wister. 383
  Foreign Body retained upwards of Twenty Years in the Nasal Passage. By Dr. I. Hays. - - - - - - - - - - 390
  Epistaxis arrested by the Administration of Common Salt. By Dr. Caspar Morris. - - - - - - - - - - - 390
  Melanotic Tumours of various Thoracic and Abdominal Viscera, without External Evidence of Melanosis. By Dr. Griscom. - 392
  Annual Report on Meteorology and Epidemics. By Dr. Wilson Jewell. - - - - - - - - - - - - 395

## REVIEWS.

XVII. Clinique de l'Hôpital du Midi—Leçons sur le Chancre, professées par le Docteur Ricord, rédigées et publiées par Alfred Fournier, Interne de l'Hôpital du Midi, Paris, 1858. 1 vol. in 8vo.
Clinic of the Midi Hospital—Lectures on Chancre, delivered by Dr. Ricord, collected and published by A. Fournier, House Physician of the Midi Hospital, Paris, 1858. 1 vol. 8vo. - - - - - - - - - 427
XVIII. On Stricture of the Urethra. By Henry Smith, F. R. C. S., Surgeon to the Westminster General Dispensary, formerly House Surgeon to King's College Hospital. London, 1857: pp. 280 - - - 433

## BIBLIOGRAPHICAL NOTICES.

XIX. Reports of American Institutions for the Insane.
  1. Of the Central Ohio Lunatic Asylum for 1857.
  2. Of the Southern Ohio Lunatic Asylum for 1857.
  3. Of the New York City Lunatic Asylum, for the year 1856.
  4. Of the Bloomingdale Asylum, for the year 1856.
  5. Of the Vermont State Asylum, for the fiscal year 1856–7.
  6. Of the Western Lunatic Asylum, of Virginia, for the two years ending on the 30th September, 1857.
  7. Of the Retreat, at Hartford, for the fiscal year 1856–7.
  8. Of the New York State Lunatic Asylum, for the year 1856.
  9. Of the Massachusetts State Lunatic Hospital, at Worcester, for the year 1856.
  10. Of the New Hampshire State Asylum, for the fiscal year 1856–7. - 449
XX. Proceedings of Westchester County Medical Society, at its Annual Meeting, held in the Village of Sing Sing (N. Y.), June 3, 1856. 8vo. pp. 50. - - - - - - - - - - - - - 462

ART. PAGE

XXI. San Francisco Medical Society; Annual Address delivered before the Society, pursuant to appointment, Jan. 27, 1857. By Henry Gibbons, M. D. 8vo. pp. 24. - - - - - - - - - - - - 465

XXII. Experimental Researches relative to the Nutritive Value and Physiological Effects of Albumen, Starch, and Gum, when singly and exclusively used as food. By W. A. Hammond, M. D., Assistant Surgeon U. S. A. - - - - - - - - - - - - - - - - - 468

XXIII. Essays on the Secretory and the Excito-Secretory System of Nerves in their Relations to Physiology and Pathology. By Henry Frazer Campbell, A. M., M. D., one of the Vice-Presidents of the American Medical Association, and Professor of Special and Comparative Anatomy, in the Medical College of Georgia (Augusta). With Illustrations. 8vo. pp. 135: J. B. Lippincott and Co., Philadelphia, 1857. - - - 470

XXIV. The Enlarged Prostate; its Pathology and Treatment; with Observations on the Relation of this Complaint to Stone in the Bladder. By Henry Thompson, F. R. C. S., &c. Octavo: pp. 329. London, 1858.

The Prostate Gland and its Enlargement in Old Age. By Decimus Hodgson, M. D., Demonstrator of Anatomy in the University of Glasgow, London, 1856. - - - - - - - - - - - - - - 473

XXV. A Practical Treatise on the Diseases of Children. By J. Forsyth Meigs, M. D., Fellow of the College of Physicians of Philadelphia, etc. etc. Third edition. Carefully revised. 8vo. pp. 724. Philadelphia: Lindsay and Blakiston, 1858. - - - - - - - - - - - 479

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XXXII. Plates Illustrative of Wilson on Diseases of the Skin. Fourth edition. Philadelphia: Blanchard and Lea, 1857. - - - - - 490

# QUARTERLY SUMMARY

OF THE

# IMPROVEMENTS AND DISCOVERIES IN THE MEDICAL SCIENCES.

## FOREIGN INTELLIGENCE.

### Anatomy and Physiology.

PAGE
1. Choroid Plexus of the Human Brain. By Prof. Luschka. - 491
2. Histology of the Supra-Renal Capsules. By Dr. Harley. - 492
3. Function of the Supra-Renal Capsules, and their supposed Connection with Bronzed Skin. By Dr. George Harley. - - 493
4. Variations of the Colour of Venous Blood. By Prof. Claude Bernard. - - - - - 494
5. On the Properties and Uses of the Red Blood, and of the Dark Blood. By Dr. Brown-Séquard. 496
6. Membrana Meconii, and Rete Vasculare, newly discovered Structures existing in the Fœtus. By Dr. B. Ridge. - - 497

### Organic Chemistry.

7. On the Physiological Relations of Albumen. By Dr. Hayden. 497
8. On the Chemical Changes in the Air during Respiration. By Dr. Harley. - - - - 500

### Materia Medica and Pharmacy.

9. Influence of Liquor Potassæ and other Alkalies on the Therapeutic Properties of Henbane, Belladonna, and Stramonium. By Dr. A. B. Garrod. - - - - 501
10. Experiment on Colchicine, and the Comparative Action of the Dry Bulbs and the Seeds of Colchicum. By Prof. Schroff. - 502
11. Emmenagogue Action of Achillea Millefolium. By Dr. Ronzier-Jolly. - - - - 503
12. Defects of ordinary Escharotics, with suggestions for their Improvement. By Mr. Ellis. - 503
13. Sulphuric Acid and Sulphate of Zinc as a Caustic Agent. By Mr. Henry Thompson. - - 504
14. Administration of Cod-liver Oil, and Substances soluble in it, in Capsules. By Mr. T. Spencer Wells. - - - - 504
15. Preparation of Iodide of Calomel. By M. Boutigny. - 505
16. Lotion for Strumous Glands. - 505
17. Cocoa-nut Oil Ointments. - 506
18. Proposed Substitute for Oils and Fats in Ointments. By Mr. Schacht. - - - - - 506

### Medical Pathology and Therapeutics, and Practical Medicine.

19. Treatment of Diabetes by Sugar. By Drs. Budd, Williams and Corfe. - - - - 506
20. Bronzed Skin—Disease of the Supra-Renal Capsules. By Mr. Hutchinson and Dr. Addison. - 509
21. Treatment of Inflammatory Diseases of the Respiratory Organs. By Dr. Semple - - 513
22. Treatment of Pleuro-Pneumonia. By Dr. S. O. Habershon. 514
23. Hydropneumothorax treated by Paracentesis Thoracis and Injections of Iodine. By Prof. Trousseau. - - - - 515

PAGE
24. Specific Treatment of Consumption by Salts of Phosphorus. By Dr. R. P. Cotton. - 516
25. Effect of Local Influences on Spasmodic Asthma. By Dr. Hyde Salter. - - - - - 517
26. On Œdema Glottidis. By Professor Pitha. - - - - - 518
27. Acute Rheumatism caused by large doses of Hydriodate of Potass. By Dr. Charles Campbell. 519
28. Principles of Treatment in Chronic Rheumatism. By Dr. Inman. - - - - - - 519
29. Perchloride of Iron in the Treatment of Erysipelas. By M. Aran. - - - - - - 520
30. Guarana in Chronic Diarrhœa. By Dr. Hervé. - - - - 521
31. Use of Kameela as an Anthelmintic. By Mr. Arthur Leared. 522
32. On the Employment of Tartarized Antimony in the Treatment of Chorea. By Dr. Adrien Marcotti. - - - - - - 522
33. Lactate of Zinc in Epilepsy. By Dr. Herpin - - - - 522
34. Therapeutic Action of Chlorate of Potash, with a New Mode of Administering it. By Dr. Dethan. - - - - - - 523
35. Movable Kidneys. By Prof. Oppolzer. - - - - - - 523
36. Functional Paralysis. By Dr. Handfield Jones. - - - 524
37. The Doctrine of Elimination, as propounded by recent Authors. By Dr. Thomas Inman. 524

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

38. After-Treatment of Surgical Operations. By Dr. Broadbent. 525
39. Causes of the Pneumonia which Supervenes upon Laryngotomy. By Prof. Schuh. - 525
40. Process of Repair in Subcutaneous Diversion of the Tendo-Achillis. By Mr. Holmes Coote. 527
41. Suppuration of Strumous Glands. By Mr. James Paget. 528
42. Strumous Inguinal Glands. By Mr. James Paget. - - - - 529
43. Cancerous Lymphatic Glands. By Mr. James Paget. - - 530
44. On Congelations. By M. Vallette. - - - - - - 530
45. A Mixture of Collodion and Castor Oil as an Application to Severe Cases of Burns and Scalds. - - - - - - 532
46. Employment of Collodion in Orchitis. By Dr. Losetti. - 532
47. Large Doses of Disulphate of Quinine in Dysuria and Retention. By Dr. Serres. - - 532
48. Thoracic Aneurism successfully treated. By Mr. Tufnell. 532
49. Cure of Popliteal Aneurism by Digital Compression of the Vessel corresponding with the Sac. By M. Vanzetti. - - 535
50. Excision of Enlarged Tonsils. By Mr. James Paget. - - 535
51. Experience of the Surgeons of the "Dreadnought" as to Pirogoff's Operation at the Ankle-joint. By Mr. I. Croft. - - 536
52. On some Points connected with the Treatment of Obstinate Stricture of the Urethra. By Mr. Henry Smith. - - - 537
53. Diagnosis of Hydrocele. By Prof. Nélaton - - - - 538

OPHTHALMOLOGY.

54. On some Points in the Pathology and Morbid Anatomy of Glaucoma. By Mr. Hulke. - 539
55. Vascular Tumour of the Orbit of many Years' Standing, and latterly producing threatening Symptoms, successfully treated by the Injection of Tannic Acid. By Mr. Haynes Walton. - - 542
56. Nævi on the Eyelids cured by Perchloride of Iron. By Mr. Hulke. - - - - - - 543
57. Dislocation of the Crystalline Lens. By Mr. White Cooper. - 443

### MIDWIFERY.

PAGE
58. Reciprocal Sympathies between the Uterus and Bladder in Women. By Dr. W. T. Montgomery. - - - - - - 544
59. On Coagula formed in the Veins during the Puerperal State, and their occasional Transportation into the Pulmonary Artery. By Dr. Graily Hewitt. - - - - - - 548
60. On the Membrana Decidua which surrounds the Ovum in Cases of Tubal Gestation. By Dr. Robert Lee. - - - - 549
61. Extra-Uterine Gestation. By Dr. Diamantapuplos. - - 551
62. Ruptured Uterus. By Mr. Dillon Kelly. - - - - 552
63. Intra-Uterine Fractures. By Dr. Herbert Barker. - - - 552
64. Report on Cross-Presentations. By Professor Spaeth. - 553

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## AMERICAN INTELLIGENCE.

### ORIGINAL COMMUNICATIONS.

Singular Result [Thrombus] of an Injury in the last Stage of Pregnancy. By Bedford Brown, M. D. - - - - - - 557
Tumour occurring thirty-six hours after Delivery. By J. Marcus Taylor, M. D. - - - - 558
Case of Poisoning by Laudanum; Recovery. By Thos. J. Gallaher, M. D. - - - - - 559
Case of Hernia. By Robert Lane, M. D. - - - - - - 560
Dislocation of the First Phalanx of the Thumb upon the Dorsum of the Metacarpal Bone. By Benjamin Cutter, M. D. - - 561

### DOMESTIC SUMMARY.

Dislocation of both Thighs—one into the Foramen Ovale, the other on the Dorsum of the Ilium, with Fracture of the Cervix Femoris. By Dr. J. Mason Warren. - - - - - - 563
A Simple and Efficient Bandage for Fracture of the Clavicle. By Dr. Julian Chisholm. - - 564
Some Remarks on Cataract. By Dr. C. S. Fenner. - - - - 565
Thrombus of the Vagina. By Dr. Boisliniere. - - - - - 566
Fatal Asphyxia from Imperfect Combustion of Gas. - - - 567
Inverted Toe-Nail treated without Operation. By Dr. Robert Campbell. - - - - - - 568
Case of Impalement. By Dr. A. C. Garratt. - - - - - 568
Extraction of a Living Child, by Turning, after the Death of the Mother. By Dr. G. W. Thornton. - - - - - - - 569
Absence of Urea and Uric Acid in Urinary Secretions in Yellow Fever. By Dr. F. Peyre Porcher. 570
Creasote in Dysentery. By Dr. G. E. Elmer. - - - - - 570
Euphrasia Officinalis as a Cure for Epilepsy. By Dr. J. G. Kyle. 570
Treatment of Prolapse of the Funis. By Dr. T. Gaillard Thomas. - - - - - - - 570
Inoculation with Gonorrhœal Matter for the Cure of Granular Lids and Corneitis. - - - 570

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FOR APRIL 1858.

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## ART. I.—*The Influence of the Placenta upon the Development of the Uterus during Pregnancy.* By WILLIAM READ, M.D., formerly Physician to the Boston Lying-in Hospital. [Read before the Boston Society for Medical Improvement, Dec. 28, 1857.]

IN the course of a somewhat extended consultation of obstetrical writers, undertaken while investigating the subject of placenta prævia, nothing became more evident than the insufficiency of any theory of the development of the uterus as at present propounded, to account for all the phenomena which manifest themselves in this unnatural form of pregnancy.

The theory of uterine development recognized by writers at the present day, is, that the uterus begins to enlarge at the fundus; that the body of this organ next takes part in the process, then the cervical portion, and finally the cervix itself. That this process of enlargement goes on in the fundus and body exclusively for 5, 6, or 7 months, or even longer, and that after this time the increase of its cavity is gained at the expense of the neck, the rest of the uterus remaining comparatively quiet. That in consequence of this process, the uterus at the end of gestation acquires a fusiform shape, the smallest end resting in the pelvic basin.

But while agreeing in the general plan of development, nothing can be more vague and contradictory than the opinions expressed as to the rate and mode in which this development is carried on.

The absence, also, of any proof whether the cases on record, by which the size and shape of the uterus at different periods of gestation have been determined, were all of them normal presentations, or whether a part of them were not presentations other than those of the head, renders the results obtained from them of doubtful value.

That the uterus enlarges as the fœtal mass increases in size, is a fact that admits of no dispute; but that it expands in one part before another, in obedience to any organic law, as the consequence of the operation of a vital cause, may be doubted.

If it should be proved that, irrespective of the position of the placenta upon the uterine walls, the fundus always began to expand before any other portion of the uterus, and that, as the development proceeded gradually downward, the cervix was the last to lose its characteristic shape, until, at the close of gestation, the outline of the whole organ was constant and symmetrical, whatever may have been the presentation of the child, a strong and unanswerable argument might be made out in support of the present theory. But in this conclusion we are not sustained by facts. In normal presentations, at the period of its utmost development, the general outline of the uterus is pyriform, the base being above, and the apex resting in the cavity of the pelvis. When the breech presents, it becomes almost globular; and in transverse presentations the long diameter is at right angles to the axis of the pelvis; proving very conclusively that the shape of the uterus, at the termination of gestation, is not the result of development, but depends upon the position of the contained fœtus.

Neither is the uterus symmetrical at the close of pregnancy. According to Mr. Doherty,[1] if a line be drawn round the body of this organ at the insertion of the Fallopian tubes, which in the unimpregnated state are situated nearly in the median line, it will be found that $\frac{3}{5}$ of its circumference is behind them, and $\frac{2}{5}$ in front. Cazeau[2] also makes the same remark. The insertion of the tubes, also, from being nearly at the level of the fundus, is now found to be one-third of the way towards the os, showing that a much greater expansion has taken place in one direction than another. The gradual mounting of the uterus in the cavity of the abdomen proves nothing, for, supposing that the expansion should begin in any portion of its walls, the inability of that expansion to extend beyond a certain degree in any other direction than upward or downward, and the impossibility of its enlargement being accommodated in the pelvic cavity, would of necessity force the mass in an upward direction, and produce the same apparent effect as if the fundus alone was enlarging. The mere fact, therefore, that the uterus rises out of the cavity of the pelvis, as the gestation proceeds, is no proof that any particular portion of this organ is being first developed.

Great reliance has been placed on the proofs derived from the changes which the neck undergoes during the latter portion of pregnancy: but except in first pregnancies, even these are not to be depended on. In relation to this point, M. Jacquemier[3] remarks that "the period when the dilatation of the neck commences has not as yet been fixed with any precision, and seems to offer many individual differences. The dilatation and shortening of the neck are two phenomena intimately connected, which are observed simultaneously. But, although it has been very generally admitted that the dilatation and the shortening of the neck begin at the fifth or sixth month, it cannot be regarded as a term fixed by any exact observation." M. Cazeaux states that the neck preserves its whole length until the last fortnight, and that in that time only is it absorbed into the cavity of the uterus.[1] The absence, moreover, of all data which would determine the position of the placenta or the presentation of the child in each particular case recorded, renders the results obtained from them almost valueless.

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[1] Braith. Retros., July—Dec., 1840, art. 127.

[2] Traité theorique et pratique de l'Art des Accouchement, 5th ed., p. 94, note.

[3] Manuel des Accouch., vol. i. p. 177.

The greatest diversity of opinion also exists in regard to the period at which the relative changes in the uterus begin. Mr. E. Murphy places the period during which the cervix expands, from the 7th until the 9th month.[2] Mr. Burns[3] states that the cervix begins to partake in the development of the uterus at the 5th month, and continues till the 9th. Mr. F. H. Ramsbotham[4] places it at the 6th; "when five months are perfected, or about that period." Mr. J. T. Ingleby[5] says: "Before the fifth month, the development of the uterus is confined to its fundus and body; but after the fifth month, the distending power of the ovum is exerted upon the neck of that organ which it dilates circularly from above." Dr. John Ramsbotham[6] remarks that for six or seven months the uterus "has been more particularly developed in its fundus and body; and that about that period the cervix uteri becomes shorter and thinner." Dr. Robert Collins[7] places it in the last three months. Dr. Robert Lee[8] states that the shortening of the cervix takes place in the 7th month. Dr. Blundell[9] says that, "during the two or three months in the end of pregnancy, the cervix uteri gradually dilates itself, so as to form a part of the chamber tenanted by the fœtus." Dr. Churchill[10] remarks "that the increase in size of the womb commences at the fundus, and as this is developed, the body enlarges; last of all, and not before the fifth month, the cervix." Dr. C. D. Meigs[11] puts it at the 7th month. Moreau[12] states "that from the first to the third month the development is principally effected at the expense of the fundus; from the third to the sixth, by the increase in the body; in the last three months it continues at the expense of the neck. This order cannot be broken without a change in the duration of pregnancy."

According to Dr. Davis,[13] it is during the last three months. Dr. Conquest[14] says it begins at the fifth month. Dr. Maunsell[15] at the 6th or 7th. Jacquemier[16] places it at the 7th, but expresses no great confidence in these dates. Velpeau[1] considers that the change has begun before the fifth month, but qualifies his statement by remarking that "frequent observation, and the most careful investigation, have singularly lessened the confidence I formerly had in them (referring to various assumed facts in regard to the changes in the cervix uteri). The changes to which the neck is subjected during gestation, vary almost as much as its anatomical characters in the unimpregnated state. What I have said on the subject should therefore be understood only in a general sense." M. Cazeaux[2] believes that, "during the first six months of gestation, the uterus is developed at the expense of the fibres in the superior part of the body, or fundus of the organ particularly; while in the last three months, the fibres appertaining to the lower third of the womb are developed in a rapid manner, and the cavity of the organ is enlarged in consequence of the distension and growth of this lower part; a proof of which is, that the body of the uterus, which was pyriform in the earlier months, is perfectly ovoidal in shape towards the close of pregnancy." Mr. Edward Rigby[3] states that in the fifth month the change is distinctly perceptible. From all this, we see how little reliance can be placed upon mere opinions, which allow a latitude of three months for the commencement of a process, which, according to all analogy, should, under equal circumstances, begin at a uniform period.

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[1] Sup. cit., p. 101.

[2] Mid., Lond. 1852, p. 335.

[3] Ed. by James, sect. 38.

[4] Obstet. Med., Am. ed., p. 340, order 4th, sect. 1—a.

[5] Prac. Treat. on Ut. Hem., p. 140.

[6] Pract. Observ., 2d ed., p. 291.

[7] Pract. Mid., Am. ed., p. 61.

[8] Lect. on Mid., p. 363.

[9] Lect., ed. by Castle, p. 444.

[10] Theory and Pract. of Mid., § 157.

[11] Treatise on Obstetrics, p. 433.

[12] Transl. by Betton, p. 40.

[13] Obstetric Medicine, p. 1038.

[14] Outlines of Med., 6th ed., p. 157.

[15] Dublin Prac. of Med , p. 167.

[16] Sup. cit., vol. i. p. 178.

Nor are the proofs derived from the supposed rate of increase in the placenta any more satisfactory in their nature. M. Cazeaux[4] assumes that the placenta gains its size almost entirely within the first six months, or during the period while the fundus is enlarging, and hence derives an argument in favour of their mutual adaptation. In this, in so far as he assumes that the fundus is the proper location of the placenta, he is sustained by Jacquemier,[5] who also considers that it is there situated in accordance with a vital law; "thus it fixes itself there in obedience to a pre-existing organic attraction, for it is not to be supposed that all parts of its surface are alike fitted for the development of the placenta." Velpeau[6] states that "the placenta constantly augments in the same proportion as the surface of the womb with which it is in immediate contact." Mr. Carpenter[7] gives as his opinion, that after the third month the placenta "goes on increasing in accordance with the growth of the ovum."

In answer to the proposition of Cazeaux, it may be said that, according to the information already obtained, it seems to be proved that there is no particular location for the placenta in the uterus. Its diversity of situation is so great that it may be assumed, as a general truth, that any portion of the interior of the uterus which is out of the way of the changes which take place at the end of gestation, when the os dilates, and which also is not liable to compression from the child's head during labour, is proper and fit for the attachment of the placenta. As to its seat on the fundus, long held to be the natural position for its location, observation proves that it is situated there rarest of all. Indeed, in 600 cases reported by Nægele,[1] it was found more often over the os uteri than the fundus, there being 11 instances of the former and only 7 of the latter. In 100 cases reported by Mr. Doherty,[2] he found that it was situated on the anterior wall in 25; on the posterior wall in 54; to the left side in 10; to the right in 8; leaving only 3 cases for all the other positions in which it could be. "Of 34 women," says Velpeau,[3] "who died while pregnant, or soon after delivery, at the Hôpital de Perfectionnement, I found, upon examining the parts, that the centre of the placenta corresponded to the orifice of the tube in twenty cases; it was in front of it in three cases; behind it in two; below it in three; and in six cases only towards the fundus."

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[1] Transl. by Meigs, 4th ed., p. 139.

[2] Sup. cit., p. 702.

[3] System of Mid., part i. chap. 2.

[4] Sup. cit., p. 702.

[5] Sup. cit., vol. i. p. 273.

[6] Sup. cit., p. 209.

[7] Prin. of Human Physiol., 5th Am. ed., § 983.

To compare the size of the placenta with that of the uterus, except in a post-mortem examination, which must be done in order to substantiate the theory of Velpeau, is of course impossible, and the difficulties which must always accompany attempts to measure these organs, are of such a nature and so great that but little reliance can be placed upon the results; and, moreover, the size of the uterus is not always dependent on the size of the child, for many small fœtuses are surrounded by an immense quantity of water, and *vice versa;* and why a larger placenta should be the result in one case and a smaller one in the other, is difficult to perceive, and contrary to analogy.

In regard to Mr. Carpenter's statement, facts prove directly the contrary. There is not the slightest agreement between the weight of the child and that of the placenta, which ought to follow if there was a parallel growth. The following weights, taken from the records of the Boston Lying-in Hospital, prove this conclusively:—

| Weight of child. | Placenta. | | Child. | Placenta. | |
|---|---|---|---|---|---|
| lb. 8½ | lb. 1 | 7 oz. | 7 | lb. 1 | |
| 8 | 1 | 6 | 8½ | 1 | 4 oz. |
| 8 | 1 | 8 | 6 | 1 | |
| Twins 11 | 2 | | 7½ | 1 | 6 |
| 6¼ | 1 | 4 | 9½ | 1 | 8 |
| 6½ | 1 | | 7¾ | 1 | |
| 8 | 1 | 4 | 8 | 1 | 12 |
| 8¼ | 2 | | 9 | 2 | |
| 7¾ | 1 | 4 | 7½ | 1 | |
| 7½ | 1 | 4 | 8¾ | 1 | 12 |
| 7½ | 1 | 8 | 7¾ | 1 | 8 |
| 7 | 1 | 15 | 8½ | 2 | 4 |
| 9 | 1 | 4 | 10½ | 1 | 4 |
| 9 | 1 | 4 | 8½ | 1 | 4 |
| 7 | 1 | | 8 | 1 | 8 |
| 9 | 1 | 4 | 7 | | |
| 8 | 1 | | 8 | | 12 |
| 6½ | 1 | | 10 | 1 | 4 |
| 9 | 1 | 4 | 10 | 1 | |
| 9 | 1 | 4 | 13½ | 1 | 12 |

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[1] Braith. Retros., July—Dec. 1840, art. 127.

[2] Ibid.

[3] Sup. cit., p. 210.

But beyond the weakness of the evidence upon which the theory is founded, it cannot account for all the phenomena which occur in placenta prævia. Based upon the assumption that the development of the uterus is from above downwards, from the fundus to the cervix, and that the placenta acquires most of its growth in the first six months, it follows of necessity that the greater the surface of that organ attached to that portion of the uterus which takes on its alteration of structure in the last part of pregnancy, the greater will be the separation and consequent hemorrhage. M. Cazeaux, as before quoted, assumes that the placenta acquires the most of its growth in the first six months of pregnancy, or during the period when the fundus is undergoing the same process. "This double phenomenon," says he, "seems to me quite sufficient to account for the production of hemorrhage; for when the placenta is attached to the fundus, its growth is simultaneous with the enlargement of that portion of the uterine walls on which it is implanted, and there is evidently no loss of blood; but when the after-birth is inserted over the cervix uteri, or on some adjacent point, the contrary must necessarily occur, because the growth of the placenta is nearly completed, whilst a more considerable extension of the lower third of the womb has yet to take place. Of course, the placenta can no longer participate in this rapid development by conforming to the increase of the uterus, and by following the widening of the wall on which it is inserted; and hence it spreads out from the centre towards its circumference, the fissures between its cotyledons become larger, and its different lobes are thus widely separated; but the growth of the inferior wall of the uterus is so rapid in the latter months that this mechanical widening of the placenta, upon which M. Jacquemier has particularly insisted, is no longer sufficient to prevent the tension of the utero-placental vessels, or of the cellular tissue in which they ramify; and this tension being ultimately carried to an extreme, all of these cellulo-vascular adhesions give way and become ruptured, and thus give rise to the production of hemorrhage."[1]

M. Jacquemier proposes, instead of the single process of development, another cause acting in concert with it, and which he terms mechanical distension, caused by the fœtal mass, particularly when the head presents; and in noticing the dilemma into which the supporters of the existing theory must necessarily be placed when accounting for the discrepancy of the dates of the first occurrence of hemorrhage, holds the following language: "If the separation of the placenta when it is attached to the neck of the uterus is the result of dilatation, how does it happen, upon the supposition that the cervix begins to be changed gradually from top to bottom in the sixth month, that flooding does not occur regularly at this period? If, on the contrary, as appears to me in reality to be the case, the internal orifice remains entirely closed until about the middle of the ninth month, why is it that the hemorrhage manifests itself often before that period? It is that its dilatation is not

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[1] Sup. cit., p. 702.

the only cause of the separation of the placenta. The rapidity of the development of the inferior segment of the body of the uterus, and the mechanical distension during the last months of pregnancy, which make it descend so deeply, in a short space of time, into the pelvic cavity, particularly when the head presents, constitute the ordinary cause of hemorrhage up to a period very near the end of gestation."[1] The difference, however, between his opinions and that of other authors is more apparent than real, for as to all the other points, which are in reality more essential, viz., the place where the development begins, the relative growth of the placenta with the fundus, and the direction of the developing process, he holds the same belief with them.

Exceptions to the operation of all general rules are to be expected, and it would be manifestly unfair to condemn the one already stated, on the single objection that they occur; but exceptions should be merely exceptions. They ought neither to be great in number, nor antagonistic in principle to the rule itself, both of which qualities apply to that under consideration. We refer to those cases in which, with complete presentation of the placenta, no hemorrhage takes place before the end of pregnancy. Of their existence Levret[2] was early aware. His language in relation to them is here quoted at length, both for the reason that it gives the clearest exposition of the application of the theory that can be found in any writer, and also from the fact that the theory is essentially his own; the principle upon which it is founded having been first enunciated by him. "A question naturally presents itself here, which it is interesting to clear up; it consists in knowing why some females who have the placenta attached to the proper neck of the uterus, go their full period, and why the majority of those who are in the like situation do not go so long. This variety of effect, which proceeds from the same cause, must necessarily be dependent upon the same particular circumstances which constitute a determining cause. I will explain myself, and say that, according as the placenta has been originally attached higher or lower in the true neck of the womb, the hemorrhage will come on sooner or later; moreover, when this vascular mass shall have taken root very near the os tincæ, the woman will approach nearer the natural term of her confinement than if it had attached itself at the top of the passage of the uterine neck, and in the same proportion between their two extremes; indeed, it is as well demonstrated by the mechanism of pregnancy as by practical experience in the obstetric art, that the neck of the womb does not begin to expand to aid in increasing the size of the cavity of this viscus, until the last months of pregnancy, and that it is by small degrees that the portions of the uterine neck continue in their turn to enlarge from top to bottom, from which it results that the neck cannot aid in this expansion without causing the placenta, which is not susceptible of the same extension, to become partially detached, whether at a point of its circumference, if it is more advanced on one side than the other, or at its centre, if that exactly corresponds to the middle of the top of the neck of the womb; it necessarily follows, then, that hemorrhage will ensue at a time more or less near, or more or less remote from the natural term of the pregnancy, just as the placenta happens to be attached nearer or further from the true neck of the womb." Now were the reason he adduces, viz., "that the neck cannot aid in this obliteration without causing the placenta, which is not susceptible of the same extension, to become partially detached," the true one, exceptions to a general rule of hemorrhage in the last months of pregnancy, ought to be of the rarest kind. The fact, however, as he himself admits, is not so. The researches of Mr. Doherty[1] upon this point, show that there are many cases which go the entire term without hemorrhage. He says: "I have been engaged in examining the records of cases of this description, and although, in many, the distinction is not sufficiently drawn between a partial and a full presentation, nor the period of the first occurrence of hemorrhage defined, to make them available for our present purpose, I have collected a sufficient number of which the details are accurately given, to prove, that where there is merely a bit of the placenta overhanging the os, the woman scarcely ever goes beyond the seventh or eighth month without an alarming discharge of blood; while, on the other hand, although with a full implantation, hemorrhage, in the greater number of instances, bursts forth at intervals during the latter months, it is not a very unusual circumstance to find such patients proceed without any sanguineous loss till their term is completed."

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[1] Sup. cit., vol. ii. p. 236.

[2] L'Art des Accouch., p. 373.

This he endeavours to explain by supposing that "when the placenta springs from the cervix, or, as in one patient, although originally commenced in one of the walls of the uterus, as indicated by the root of the cord, it enlarges to such a magnitude as to cover completely the neck also, its growth has been sufficiently concentrated or extensive to keep pace with the circular expansion then progressing in the inferior chamber of the womb; whereas, when the substance, being at first elsewhere affixed, does not exceed its usual proportions, but is merely developed so irregularly as to advance a portion of its margin over that part, its growth is expended in other directions, and it becomes unable to adjust itself to the daily increasing size of the region into which it has, as it were, strayed."[2] Mr. Edward Rigby also seems to have been aware of this difference in favour of complete presentations of the placenta, and in regard to it holds the following language:[3] "Our own observations have rather led to the conclusion, that where the placenta is but partially attached over the os uteri, the first attack of flooding is rarely delayed until the full term of pregnancy, but makes its appearance some weeks earlier." And in the report of a case in which the placenta was centrically placed, and yet there was no gush of blood until the full term of pregnancy had expired, asks:[4] "Are not those hemorrhages from placenta prævia which make their first appearance in the seventh and eighth months of pregnancy, generally connected with a partial attachment of the placenta to the os uteri; and on the other hand, when it is centrically detached, does not the patient usually go to the full term of gestation before any hemorrhage takes place?" His explanation of this is, that "the os uteri being only in part covered with placenta; that its other portion being free, is more capable of dilatation from slight causes than it would be were the placenta centrically attached." To the statements thus made by Levret, Mr. Doherty, and Mr. Edward Rigby, I am able to add the results of my own observations, extending over more than 800 cases of placenta prævia, in many of which the departure from the rule is so marked as to attract the most casual observer.

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[1] Braith. Retros., vol. xii. art. 175.

[2] Ibid.

[3] Sup. cit., part 5, chap. 12, Am. ed., p. 413.

[4] Braith. Retros., vol. xii. art. 175.

In view of these exceptional cases, the theory of M. Cazeaux is faulty in that it seems almost impossible to reconcile these cases with the general rule of hemorrhage, which ought to prevail if his reasoning were correct, without substituting them for the rule itself. And, indeed, he seems himself to place but little dependence on it, since in reference to these exceptional cases he adopts the theory of Moreau, which he states to be as follows: "M. Moreau[1] remarks that, in the cases cited, the infants were dead, and without doubt had been so many days. But, says he, when the fœtus dies in utero, there follow in the circulation of this organ those changes rendered necessary by the cessation of the fœtal circulation; the blood arrested in the vessels coagulates there; they become contracted, and oftentimes even obliterated; no more blood comes to the womb than is necessary for its nutrition, the stimulus which called there a great quantity no longer existing, and for this reason the dilatation of the os can proceed without much hemorrhage, although the vessels which unite its borders to the placenta may be ruptured. This appears to me to be the more rational opinion." But by adopting this he does not remedy the difficulty, for the children are not always dead, and therefore the condition of things upon which Moreau has based his explanation does not always exist, and the reasoning is good for nothing. The same objection applies to the proposition of M. Jacquemier. If we accept Levret's definition of the theory as the true one, it is necessary to suppose in those cases in which the flooding did not appear till just before the end of pregnancy, that the placenta must have been situated so low down on the cervical portion as not to have been reached by the changes which have been going on in the portions above; for although the true neck does not begin to be obliterated till the very last period of gestation—the last fortnight according to some authors—a portion of the lower part of the body has long ere this been developed to an extent sufficient to produce a separation. To suppose that all the cases which have progressed without hemorrhage till the end of pregnancy are of this description, would be to exceed the probabilities of the case, and, on the other hand, if we can suppose the placenta to be thus placed, it ought to be so small in superficies that its circumference would not reach to the space where those changes are going on—a supposition equally improbable.

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[1] Sup. cit., part 5, chap. 12, near the end.

Mr. Doherty[1] assumes that in complete placental presentations the growth of the placenta has been sufficiently concentrated or extensive to keep pace with the circular expansion going on in the latter months, while, when only a portion of it covers the os, its growth is expended in other directions, and hence is unable to adjust itself to the daily increasing size of the lower part of the uterus. That is to say, when the cervix is completely covered, the magnitude of the placenta, the concentration and extent of its growth, give it a property of keeping pace with the enlargement going on in the uterine walls, which is not possessed by the same organ, although it may be just as large, when situated elsewhere, and it may be in the immediate vicinity. His theory of exceptional development is also objectionable, for, if we grant that in a certain case the placenta has extended a portion of its circumference till, as the elder Rigby describes it, it is "somewhat like the lines of a very irregular island on the map, and one edge making almost a detached lobe,"[2] the probabilities that all the cases of partial presentation are of a like nature, or even a majority of them, are very small indeed; and moreover there is still left unaccounted for a large class of cases in which, while no portion of the placenta is over the os uteri, it is nevertheless in such immediate neighbourhood as to be exposed to all the changes to which it would have been subjected had it been attached to the os itself, and yet no hemorrhage ensues. According to Von Ritgen, the situation of the rent in the membranes with relation to the edge of the placenta was—

| | | |
|---|---|---|
| At the edge in . . . . | 22 | cases. |
| At the distance of one inch in | 8 | " |
| Between one and two inches . | 12 | " |
| Two inches . . . . . | 7 | " |
| Between two and three . . | 16 | " |
| Three inches . . . . . | 5 | " |
| Between three and four . . | 4 | " |
| Four inches . . . . . | 6 | " |
| Between four and five . . | 8 | " |
| Five inches . . . . . | 3 | " |
| Six inches . . . . . | 6 | " |
| Eight inches . . . . . | 3 | " |

So that, in the 100 cases, the placenta was within two inches of the os uteri in 49.

And again, the occurrence of hemorrhage before the fifth month, the period which authors assign as the earliest at which the changes in the cervix begin, ought to be of the rarest occurrence, if ever. This difficulty has no doubt induced some to ignore these cases entirely. M. Jacquemier almost discredits their existence; his language is, that "hemorrhages[3] which cannot be attributed to causes independent of the place of the insertion of the placenta, which declare themselves towards the end of the fourth month, and during the fifth and sixth, are in reality very rare." But while it may be true that many of the reported cases of hemorrhage occurring in consequence of placenta prævia before the fifth month are of a doubtful nature, there is nevertheless a number sufficient to establish the fact, which are guaranteed as to their authenticity by the names of the observers. Prof. Simpson[1] reports a case of hemorrhage in the fifth month, in which, after severe flooding, the child and placenta were expelled together. Mr. Everitt, of Ellesmere,[2] one of three months, accompanied with profuse hemorrhage, in which the placenta was extracted. Rigby's forty-fifth case[3] is one of twenty weeks. In this the placenta was distinctly felt to be attached to the os uteri, and there was flooding with every pain. His seventy-fifth case is one in which hemorrhage commenced at the third month. and returned at different intervals till delivery was effected at the middle of the seventh. If, extending these limits, but still keeping within bounds, we take those cases in which hemorrhage manifests itself in the fifth or sixth month, the list, instead of being an exceptional one, will form a respectable portion of any collection of cases.

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[1] Dublin Journ. Med. Sci., July, 1845, and Braithwaite's Retros., vol. xii. art. 175.

[2] Essay on Ut. Hem., p. 40.

[3] Sup. cit., vol. i. p. 237.

Having thus shown that exceptions to a general rule of hemorrhage in the last months of placenta prævia not only do occur, but are so numerous and so entirely at variance with the principle upon which that rule is founded as to be altogether inexplicable, according to any legitimate interpretation of its meaning, we come next to the question, what shall be substituted in its stead?

The principle upon which the existing theory of development in the uterus, as the consequence of pregnancy, is based, is, that this development proceeds in a uniform direction, from a fixed point, irrespective of the position of any of its contents, and at an equally independent rate. But we have shown not only by the discrepancy which exists in the opinion of authors, but by the facts themselves, that this assumption has no real foundation; the data upon which it was founded being capable of a general application only, without any special bearing upon the point at issue. What seems to be required, is, a theory which allows the development to commence at any portion of the uterine walls, and to go on, not according to arbitrary laws, but in connection with the increasing growth of the ovum, and in obedience to the ordinary physiological laws, which are constantly at work in the living body. Not that it is intended by this to ignore the vital part of the process—far from it; accepting as one of the essential elements of the problem, and as its very initial term, the vital act of impregnation, it is intended to apply to what follows; that is to say, to the phenomena which appear in the course of the growth and maturation of the ovum into the perfect child. As in the explosion of a train of gunpowder, the application of a spark may be considered a special act, while all that follows proceeds according to well known chemical laws which govern matter—just so in pregnancy, the act of impregnation is a vital act, but the development and growth of the ovum are in obedience to the same physiological laws which are ordinarily in operation in the organization of living beings.

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[1] Collected works, Am. ed., vol. i. p. 606, Case 1.

[2] Provincial Med. and Surg. Journ., Sept. 30, 1846, and Braith. Retros., vol. xiv. art. 175.

[3] Essay on Ut. Hem.

The substitute which is offered in place of the existing theory, may be stated in the following terms:—

*The attachment of the placenta to any portion of the uterus causes a development at that place, which proceeds pari passu, till, the limits of growth in the placenta having been reached, the enlargement is continued and kept up by the pressure constantly exerted on the uterine walls by the growing contents, till the time of parturition.* That is to say, at whatever point the radicles of the placenta first attach themselves after the issue of the ovum from the Fallopian tubes, at that point the development of the uterus commences, and from that point it spreads as from a common centre, and takes shape according to the position of the contained fœtus.

It is believed that the above statement is in entire accordance with the inferences which may be legitimately drawn from known data, and also in accordance with physiological laws. It is also believed that the exceptional cases already alluded to, can be clearly explained, and by a very simple mechanism.

That the attachment of the placenta on the uterine walls should produce a development at that spot, needs no elaborate proof. If we admit that the same effects follow the same causes in pregnancy as in other processes going on in the human organization, it would follow that the attachment of the placental radicles would, in the first place, produce a determination of blood to that spot in a greater quantity than previously existed there, and following this, and as a consequence of it, a development. That the supply of blood at the place where the placenta is attached, is greater than at any other point, has been established beyond a doubt, and granting this, the rest follows as a matter of course. But in connection with the development which has been going on in the region of the placenta, the other portions of the uterine walls have become more or less distended, to accommodate the constantly growing fœtus, so that if we add together the effect of the two causes, we should expect, in natural presentations, to find the uterus not very irregular, but approximating to a globular shape, which, according to M. Jacquemier, it has, up to the time of the development of the cervix.

The idea that the ovum can exert an influence sufficiently powerful to gradually distend the uterine walls, is one which has been advocated by some writers, and denied by others. Mr. Ingleby, quoted before, distinctly recognizes it; so does M. Jacquemier;[1] and it was a favourite notion of the ancients. M. Cazeaux,[2] in opposing it, remarks that "the expansive force of the ovum is powerless to overcome their resistance. * * * In a word, the growth of the ovum is the physiological cause, but not the mechanical agent of the development of the uterine walls." Velpeau[1] states that the "dilating force, altogether foreign to the product of conception, exists in the gestative organ itself. A circumstance that beyond question proves this to be the case, is that, in preternatural pregnancies, as remarked by Levret, Bertrand, Meckel, and Chaussier, and as I have also myself remarked in five instances, the uterine cavity, though empty, dilates as it does in ordinary gestation." But in answer to Velpeaux, and Cazeaux also, if the uterus expands in obedience to a physiological cause, why do we not always find it developed to the size it ordinarily attains, at the period noticed, in any particular case when the ovum is not within its cavity?—and even were this proved to be so, the fact that the ovum, in growing, has the power to overcome the resistance of the walls of the tube, in tubal pregnancies, shows that a distending force does exist in it—and if so, why should it not act in the same way on the walls of the uterus as on the walls of the tube? And still further, facts derived from observing the effects of intra-uterine tumours in enlarging its cavity, also prove that the resistance of the uterine walls is either not so great as is assumed, or that the force brought to bear on them during the process of growth in organized bodies contained within its cavity is sufficient to overcome this resistance, whatever it may be; and if by one body, thus constituted, then also by all. We are therefore justified in the conclusion that the uterine walls will expand under the constant pressure exerted upon them by the growing ovum.

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[1] Sup. cit., p. 237.

[2] Sup. cit., p. 91.

The exceptional cases to which we have alluded as being inexplicable by any legitimate application of the present theory, owe their peculiar characteristics to the attachment of the placenta in a greater or less degree upon the cervix uteri. According to theory, the more complete the placental presentation, the earlier and more profuse ought to be the hemorrhage. According to fact, it is in many instances directly the reverse. Now, if we suppose the development to commence at the place where the placenta attaches itself, at the lowest part of the cervical portion, for instance, and keep pace with the growth of this organ, the difficulty disappears at once. For, by the time that the placenta having passed the period of its most rapid growth, the fœtal mass has already begun to exert its effect upon the uterine walls to enlarge them, the added strength which the thick, firm disk of the placenta gives to the cervical portion to resist this distension, is enough to prevent its being felt in that direction. And moreover, the general shape of the uterus being finally determined by the position of the child irrespective of the placental attachment, its form at the end of gestation would be the same, other things being equal, and would be scarcely modified by this complication. It applies also to partial presentations of the placenta of every degree, from that in which the os is almost entirely covered, to that in which the edge only of the placenta is at its margin. For, just in proportion to the amount of the neck of the uterus covered by the placenta, is it protected from the distending process to which it is exposed during the later periods of pregnancy, and in just such proportion will the hemorrhage appear late or early, which is in accordance with observed facts.

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[1] Sup. cit., p. 144.

Those cases also where the placenta is on the cervix, in the immediate vicinity of the os, but at the same time not overlapping it, which Von Ritgen proves to be of frequent occurrence, and which, according to every interpretation of the existing theory, ought to manifest a hemorrhagic tendency, but do not, are perfectly accounted for by the same reasoning. For, if it be objected that the distending process being exerted upon the cervical portions, it would at the same time act upon the os uteri, to open it; it may be answered that the same property which enables the os to keep closed during the changes which take place in the cervical portion in normal gestation, would preserve it entire in this. In short, it is believed that by adopting the theory thus set forth, all the phenomena which appear in the course of pregnancy when placenta prævia exists, and which depend for their cause upon the changes going on in the uterine walls, at the point of the placental attachment, may be clearly explained and accounted for by a much simpler mechanism than by the one already accepted and recognized. And while it does not militate in principle with acknowledged physiological laws, it so applies them as to leave fewer exceptional cases, and those cases not different in character from what are constantly occurring in normal pregnancies.

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## ART. II.—*On the Alterations induced by Intermittent Fever in the Physical and Chemical Qualities of the Urine, and on the Action of the Disulphate of Quinine.* By WILLIAM A. HAMMOND, M. D., Assist. Surg. U. S. A. (Read before the Biological Society of Philadelphia, February 15, 1858.)

WE know but little at present concerning the modifications produced by diseases in the function of regressive metamorphosis of tissue, and yet it is very obvious that here our observations, if properly directed, can hardly fail to lead to results of very great importance. The exhalations from the skin and lungs, the urine, and the feces, are so many points upon which to concentrate our efforts; and by carefully studying these several excretions, a vast amount of knowledge may be obtained relative to the pathological actions going on within the system. The facility and exactness with which such inquiries can be prosecuted is only beginning to be perceived, and a rich harvest is reserved for those who will devote themselves to this field of labor.

The condition of the urine in intermittent fever has been observed by Becquerel,[1] and more recently by Stuart[2] and others. Becquerel's investigations are of the most limited character, being confined to the determination of the specific gravity and general characteristics of the excretion. Stuart's researches are also very unsatisfactory, and not of such a character as to lead to any conclusions worthy of reliance—no means of analysis other than the microscope having been employed.

The action of the disulphate of quinine upon the urine has, within a short period, been investigated by Ranke,[3] who found that the principal effect of its administration was to diminish the amount of uric acid excreted.

During a recent attack of intermittent fever of the tertian type, I had the opportunity of studying, in my own person, the effects produced by this disease on the physical and chemical qualities of the urine, and also of noticing the results ensuing from the administration of the disulphate of quinine.

There are many obvious advantages to the physiologist, and also to the science which he represents, in basing his conclusions, whenever practicable, on investigations instituted upon himself. He is assured of their correctness, and knows fully the conditions under which they are performed. On the contrary, when others (such at least as are most likely to come under his observation) are the subjects of his researches, he can never be certain that his directions have been complied with, or that he has not been otherwise deceived.

The investigations upon which this paper is based, being confined to one individual, are necessarily not such as to lead to general conclusions, and are only submitted as a slight contribution to our common stock of knowledge. Aside from their correctness, therefore, I have but little to claim for them.

The quantity, specific gravity, and general appearance of the urine were noted, and the amount of its urea, uric acid, free acid, chlorine, and phosphoric and sulphuric acids separately ascertained. The methods used in these determinations were the same as those employed in previous researches, and as elsewhere indicated.

The attack commenced at about 3½ o'clock P. M., on the 4th of January. The cold stage lasted about 35 minutes; the hot until near 10 P. M., when profuse perspiration ensued, and I fell asleep and did not awake till morning.

I was eating a hearty dinner when the paroxysm commenced. At 6½ P. M. I ate a little bread and butter and drank a cup of tea. At breakfast the following morning I ate as usual. As far as possible, my food was the same throughout the investigations, and my general mode of life was not materially changed.

At the commencement of the cold stage, the bladder was evacuated of its contents. At about 4½ P. M., it was again emptied. The quantity passed at this time amounted to 93.4 cubic centimetres, and had a specific gravity of

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[1] Séméiotique des Urines, p. 286; and Traité de Chimie Pathologique, p. 345.

[2] Charleston Medical Journal and Review, May, 1857, p. 323.

[3] Medical Times and Gazette, May 30, 1857, p. 537.

1016.35. It was of a pale straw colour, and deposited no sediment on standing. The reaction was feebly acid. Before going to sleep, I passed 283.9 cubic centimetres of urine, having a specific gravity of 1022.19. This was of high colour, strong acid reaction, and by morning had deposited a heavy lateritious sediment. On examining this with the microscope, a few crystals of uric acid were perceived.

In the morning, after rising, 495.3 cubic centimetres of urine were evacuated, the specific gravity of which was 1020.43. It was of high colour and strong acid reaction. A copious lateritious precipitate was thrown down after a short time; it consisted of urates and a little free uric acid.

For the whole period of twenty-four hours ending at 3½ P. M. on the 5th, the urine was as follows:—

| | | |
|---|---|---|
| Quantity | 1221.7 c. cm. | |
| Specific gravity | 1020.06 | |
| Urea | | 325.18 grains. |
| Uric acid | | 28.39 " |
| Free acid | | 39.40 " |
| Chlorine | | 95.42 " |
| Phosphoric acid | | 69.18 " |
| Sulphuric acid | | 32.11 " |

During the subsequent twenty-four hours of intermission, the urine was of the ensuing character:—

| | | |
|---|---|---|
| Quantity | 1650.4 c. cm. | |
| Specific gravity | 1022.17 | |
| Urea | | 480.37 grains. |
| Uric acid | | 16.84 " |
| Free acid | | 34.73 " |
| Chlorine | | 114.58 " |
| Phosphoric acid | | 52.95 " |
| Sulphuric acid | | 38.14 " |

From these records it is perceived that during the intermission there was an approach to the normal condition of the excretion under consideration. The quantity of urine, its specific gravity, and the amount of urea, chlorine, and sulphuric acid had increased, whilst at the same time the uric acid, free acid, and phosphoric acid had very considerably diminished.

The second paroxysm came on at about 4 o'clock P. M. on the 6th, and was of similar character to the first. At the termination of the chill, 104.5 cubic centimetres of urine were passed, the specific gravity of which was 1017.41. It was of a pale yellow colour, of feeble acid reaction, and remained clear. During the hot stage I evacuated 325.01 cubic centimetres of urine, of 1021.32 specific gravity, high colour, and strong acid reaction. After standing long enough to reduce its temperature sufficiently, a heavy precipitate of urates was thrown down, in which, with the microscope, a few crystals of uric acid were perceived. The urine passed after rising in the morning amounted to 518 cubic centimetres, was of 1022.04 specific gravity, and possessed the characteristics of that last described.

The following table shows the amount and character of the urine for the whole period of twenty-four hours ending at 3½ P. M. on the 7th:—

| | | |
|---|---|---|
| Quantity | 1387.2 c. cm. | |
| Specific gravity | 1019.45 | |
| Urea | | 300.16 grains. |
| Uric acid | | 31.54 " |
| Free acid | | 35.72 " |
| Chlorine | | 108.11 " |
| Phosphoric acid | | 72.95 " |
| Sulphuric acid | | 41.76 " |

At 4 o'clock P. M. on this day, I took ten grains of the disulphate of quinia, ten grains at 11 P. M., and the same quantity at 10 A. M. the following day. The paroxysm which would have ensued at about 4 P. M. was thus prevented.

The urine passed during this period of twenty-four hours was of the ordinary normal colour, and of tolerably strong acid reaction. No sediment was deposited on standing.

The following table exhibits its characters more in detail:—

| | | |
|---|---|---|
| Quantity | 1750.3 c. cm. | |
| Specific gravity | 1024.67 | |
| Urea | | 589.43 grains. |
| Uric acid | | 13.79 " |
| Free acid | | 27.54 " |
| Chlorine | | 129.83 " |
| Phosphoric acid | | 55.27 " |
| Sulphuric acid | | 46.18 " |

The presence of quinia was demonstrated by means of Herapath's test and viewing the crystals formed, with the microscope and by polarized light.

The effects resulting from the administration of the quinine are thus shown to have been well marked. The quantity of urine, its specific gravity, and the amount of urea, chlorine, and sulphuric acid were increased, whilst the uric acid, free acid, and phosphoric acid were, on the contrary, diminished.

From 3½ P. M. on this day to the same hour on the following day, I collected the urine evacuated, and submitted it to analysis. No quinine was taken during this period, and no paroxysm of the fever occurred.

| | | |
|---|---|---|
| Quantity | 1806.3 c. cm. | |
| Specific gravity | 1024.81 | |
| Urea | | 638.20 grains. |
| Uric acid | | 12.71 " |
| Free acid | | 25.80 " |
| Chlorine | | 138.27 " |
| Phosphoric acid | | 56.22 " |
| Sulphuric acid | | 40.10 " |

The above table exhibits pretty nearly the average condition of my urine in its normal state. It is seen that, notwithstanding no quinine was taken, the excretion maintained its general character of the previous day.

No more paroxysms ensued, and circumstances prevented me making at that time any further analysis of the urine.

The accompanying table, in which the several results obtained are collected together, will tend to facilitate reference:—

| | 1st day. Paroxysm. | 2d day. Intermission. | 3d day. Paroxysm. | 4th day. Administration of quinine. | 5th day. |
|---|---|---|---|---|---|
| Quantity of urine | 1221.7 c. cm. | 1650.4 c. cm. | 1387.2 c. cm. | 1750.3 c. cm. | 1806.3 c. cm. |
| Specific gravity | 1020.06 | 1022.17 | 1019.45 | 1024.67 | 1024.81 |
| Urea | 325.18 grs. | 480.37 grs. | 300.16 grs. | 589.43 grs. | 638.20 grs. |
| Uric acid | 28.39 " | 16.84 " | 31.54 " | 13.79 " | 12.71 " |
| Free acid | 39.40 " | 34.73 " | 35.72 " | 27.54 " | 25.80 " |
| Chlorine | 95.42 " | 114.58 " | 108.11 " | 129.83 " | 138.27 " |
| Phosphoric acid | 69.18 " | 52.95 " | 72.95 " | 55.27 " | 56.22 " |
| Sulphuric acid | 32.11 " | 38.14 " | 41.76 " | 46.18 " | 40.10 " |

From these data it is perceived that, during an attack of intermittent fever, the uric acid and phosphoric acid are very much increased in amount, and the urea and chlorine greatly diminished. During the intermission, there is a close approach to the normal proportions of these constituents, but a subsequent paroxysm restores the former condition. The disulphate of quinia, however, produces a permanent impression on the character of the urine, and, with the return to the natural relations existing between the several substances entering into the composition of this excretion, the disease disappears.

There are several facts indicated by the foregoing researches, to which attention may be directed. Thus the increase in the amount of phosphoric acid eliminated during a paroxysm points strongly to the nervous origin of the disease. The excess in the amount of uric acid excreted, whilst at the same time the quantity of urea was so strikingly diminished, are facts of the highest importance, and, in connection with the circumstance that during the intermission, and after the administration of the quinine, the urea was increased and the uric acid diminished in quantity, show the close relation existing between these substances, and render more probable the theory that the former body is a product of the continued metamorphosis of the latter.

From so limited an array of facts as the preceding, no hypothesis in regard to the pathology of intermittent fever can be considered as tenable. If, however, the results of these investigations should be confirmed by subsequent observers, a great step will have been made towards a satisfactory theory of this disease, and a rational idea of the therapeutical action of the disulphate of quinine may be formed. The subject is, therefore, left for the present, with the hope that others will turn their attention to the furnishing of material for its elucidation.

## ART. III.—*On the Use of Iron.* By ISAAC CASSELBERRY, M. D., Evansville, Ind.

A BRIEF notice of the anatomy and physiology of the blood will make its morbid changes during fever more evident.

*Anatomy.*—The blood is a living fluid tissue, which is formed and matured by the organizing force of the automatic nervous system out of the organizable constituents of the maternal blood during embryotic life.

After birth, the organizable elements of the blood are derived from the food, which is decomposed by the gastric juice. These elements are then transformed and rearranged by the organizing force of the automatic nervous branches of the stomach, and constitute *chyme.*

This is conveyed into the duodenum, in which additional organizable elements are received from the liver and pancreas. The whole mass is then transmuted and reformed by the organizing force of the automatic nervous branches of the duodenum into *chyle.*

This is absorbed by the lacteals, in which it undergoes a continued series of molecular changes and combinations, until it is deposited in the subclavian vein.

The blood consists of a vast number of cells, which are the agents the automatic nervous system employs to perform its functions in the human organism. These differ in form, size, and functional endowments, according to the varied duties they are designed to fulfil.

For practical purposes, they may be arranged into two classes; one of nutrition or reproduction, the other of secretion or removal. When the human organism is at maturity and in health, these processes should maintain a relation of exact equivalence.

*Physiology.*—The cells of nutrition are endowed with an elective force, by which they select and attract the nutritive elements of the blood, which they transform and rearrange into molecular combinations. These combinations undergo a continued series of molecular changes and recombinations, until they attain maturity, when the elements they have elaborated are appropriated and form constituent parts of the tissues, with which they possess identity of elementary composition and arrangement.

The cells of secretion are, likewise, endowed with an elective force, by which they select and attract the effete or worn-out elements which they transform and arrange into molecular combinations. These combinations undergo a continued series of mutations, till the elements they possess are completely elaborated in the capillaries of the depuratory glandular systems, in which they are coalesced and removed from the blood as secretory products. The form of force by which they are coalesced is a specific endowment of each of these glandular systems, by which this important change is produced.

One depuratory system cannot, therefore, compensate for deficient function in another only so far as the elements conveyed to it are identical with those of its own secretion.

The blood gives each tissue the means of repairing itself: first, by furnishing it with material of new growth; secondly, by removing from it those elements of its composition which have become worn out and useless. Were this the whole history of the blood, its investigation in disease would be comparatively easy. But it undergoes progressive changes analogous to the growth of the solid tissues. The new materials it obtains from the food are not blood at the time of their addition; they are crude immature products which subsequently mature.

The automatic nervous system endows the blood with a power to resist changes, convert crude material into its own elements, and perpetuate its own elementary composition and molecular arrangement. Physiology teaches that the abundance of cell development measures the activity and constancy of growth; and that this developmental activity in the blood is infinitely greater than in any other tissue. Cell-germs abound in the fluid of the thoracic duct. But they attain their maturity and fulfil the purpose of their creation only when received into the blood.

Not only does the blood grow, but its growth must precede that of every other tissue in the organism. It grows, then the other tissues grow at its expense.

Its functions in health will show sufficiently what peculiar difficulties attend any investigation of its changes in disease. The extreme rapidity with which all its changes transpire, and the minute quantities in which several ingredients exist, oppose great obstacles to the research; but these are greatly enhanced by the physiological fact that all the elements of the blood correspond to different periods of time, to different degrees of development, and to different developmental cells.

Viewed as an object of scientific research, human life exhibits itself in a series of manifestations, the connection and recurrence of which are determined by the changes which the food and the oxygen absorbed from the atmosphere undergo in the organism under the controlling influence of the automatic nervous system; for the first condition of life is the assimilation of nutritive material, and the second is that of a continual absorption of oxygen from the atmosphere. The intensity, the integrity, the quantity, and the quality of the molecular combinations and rearrangements of the elements of the blood depend on the mutual action of the oxygen of the atmosphere and the elementary constituents of the food.

The most convincing experiments have proved that the human organism is absolutely incapable of producing an elementary constituent, such as carbon or nitrogen, out of substances which do not contain it; therefore it follows that all kinds of food, to produce the tissues and maintain them in a normal relation with each other, must possess the elements of which the tissues are composed. Fibrin and albumen, the chief ingredients of the blood, contain seven chemical elements, among which are oxygen, carbon, hydrogen, nitrogen, phosphorus, and sulphur. The serum retains in solution sea salt and the salts of potassa and soda, in which the acids are carbonic, phosphoric, and sulphuric.

The globules of the blood contain fibrin and albumen, with a red colouring matter in which iron is a constant element. They are formed out of the elements contained in the serum; because it is the atmosphere, and supplies the material for cell development, which is constantly taking place within this fluid. Hence it is the most important branch of hæmatology.

The chief constituents of the blood are compounds, in which the relative proportions are invariable. These compounds are the nascent states of the tissues, and maintain a relation of mutual dependence on each other. The blood could not become organized, nor could it promote the growth of tissues without the existence of albumen in the serum; because the globules are developed in this fluid at the expense of its albumen, and they carry the oxygen which they absorb from the atmosphere into every tissue of the organism, where it determines the changes which may transpire.

Oxygen is necessary to the growth and maturity of the tissues; it is necessary for their conservation; and it is necessary for their conversion into lifeless compounds; but it can only be introduced by the agency of the globules. These can only attain a condition favourable to the reception and conveyance of the oxygen at the expense of the primary elements of the blood, which are obtained from the elementary constituents of the food.

The absorption of oxygen and the secretion of carbonic acid gas constitute the visible functions of respiration, and the vast absorbent and secretory capacity of the lungs depends on the immense expanse of absorbent and secretory cells brought in proximity to the oxygen of the atmosphere at each inspiration, and on the quantity and quality of the molecular combinations of the elements of the blood which are developed during that period.

The food must contain and supply the elements of which the blood is composed; they must undergo normal transformation; they must grow and mature normally, before the necessary quantity of oxygen can be absorbed to consume them by combination. For a more enlarged consideration of this interesting subject the reader is invited to an essay in the *American Journal of the Medical Sciences*, for July, 1855, on the Physiology of the Automatic Nervous System, in which I maintain the unity and mutual convertibility of all the different forms of external force and of all the different forms of the automatic nervous force, and to another essay in the same Journal for April, 1856, in which I endeavour to show the causes of fever, and explain the mode in which they produce diseased transformation of the tissues.

*Pathology.*—From these physiological facts, it is evident that fever may assume a vast multiplicity of forms, which are manifested by characteristic symptoms. These have often been *mistaken* for the disease itself; and the error has been magnified and perpetuated by giving them *names* which have been commemorated by *learned* authors. Symptoms are like sentinels on duty; they guard the organism, evince the existence of disease, indicate the avenues of its approach, and the degree of resistance offered by the organism, manifest its progress, portray its pathology, and proclaim its triumph or announce its extermination. Clothed in the attire of fancy, marshalled by the mandates of theory, mantled by the nomenclature of authors, they are often received and entertained in the mansion of affliction instead of the disease.

*Fever is a diseased transformation of all the tissues;* but the fluid tissues suffer the most, because the solid tissues are formed in them and of them. The blood contains not only the nutritive elements, but also the effete constituents of the transformed solid tissues. Both the nutritive and the effete elements are formed, matured, and appropriated by cellular combinations.

These are the agents of the automatic nervous force acting on the organizable constituents of the food, and blood, or upon the organizable elements of the transformed tissues.

The activity, the quantity, and the quality of the molecular combinations depend on the intensity and integrity of this force, manifested as nutritive attraction, molecular affinity, and effete repulsion. The nascent states of this force in any of these forms are easily transmuted; and both the developmental cells and the molecular combinations, to the formation of which it contributes, as the formative or organizing force, will partake of the abnormal mutation. Hence the vast number of symptoms which arise during the incipiency and course of fever. The cells of nutrition neither grow nor mature normally; nor are their constituents appropriated to the nutrition of the tissues normally. From the diminished quantity and feeble intensity of the organizing force of the automatic nervous branches of the digestive and assimilative organs, the organizable elements of the food are not decomposed, transformed, rearranged, and absorbed in normal quantity and quality; only a small amount of nutritive material is received by the lacteals out of which blood may be formed and developed; and the molecular combinations of the cells, containing this, are so imperfect, that they cannot undergo mutations with normal force and celerity.

Imperfectly developed by molecular combination, the nutritive constituents of the blood often aggregate in some of the capillaries, in which they then constitute excessive and perverted nutrition, or inflammation. This is of frequent occurrence during the progress of fever, and merits the anxious and careful consideration of the physician.

During fever the secretory cells are neither formed, developed, nor matured normally; nor are the elements which they should normally aggregate and elaborate depurated from the blood; because the nutritive elements neither absorb a normal quantity of oxygen from the atmosphere, nor does that which is received undergo normal molecular combinations on account of their imperfect molecular development.

The imperfectly combined oxygen, when it is not consumed by molecular combination with the protein elements of the blood, acts upon those elements of the solid tissues, exciting the sensation of *pain*, when it consumes branches of the sensitive nervous tissue, producing *irregular* and *involuntary* muscular actions, when it consumes those of the excito-motory, and creating the sensation of *thirst, oppression*, and *suffocation*, when it consumes only those of the automatic nervous system.

During the incipiency of fever, the effete elements of the blood, therefore, undergo a series of abnormal transformations, and are chiefly retained in the blood; a lesion of nutrition and secretion exists, the organizing force of the automatic nervous system, which, in a normal state, creates, maintains, and governs the cellular formation and coalescence of the elementary constituents of the blood is increased, decreased, or perverted; there is a lesion of capillary circulation; the blood recedes from the external capillaries and accumulates chiefly in the portal venous system; a diseased transformation of all the tissues is present; *Fever exists;* it is manifested by symptoms; these assume a great multiplicity of appearances and forms, according to the pathological condition of the tissues.

There is no longer a perfect equilibrium between the processes of waste and repair; neither a normal quantity of food is desired, nor could it be assimilated, were it ingested; every tissue, therefore, suffers for appropriate nourishment.

Those more immediately concerned in the processes of nutrition most early evince the requirements of food, or the necessary elementary constituents for the repair of their tissues.

As the automatic nervous system creates, governs, and maintains all the tissues by its organizing force acting on the organizable elements of the food and blood, it is the first tissue to manifest the want of nourishment by lesion of the different forms of its force.

Quinine supplies nutritive elements to this tissue, and by this gives its different forms of force increased intensity. Its physiological effects on the organism are an increase of the developmental intensity and celerity of the cells, and a promotion of their molecular combination and coalescence, by which the transformation of the nutritive cells is increased, and those of secretion augmented. When a diseased transformation exists, it should, therefore, be carefully administered, and its effects sedulously investigated.

In the June No. of the *Cincinnati Medical Observer*, for 1857, I have given my views of the use of quinine in fever; and in the July No. of the *American Journal of the Medical Sciences* for 1857, I have discussed, at some length, the use of water in fever.

In the latter essay I have maintained that the hydrogen of the water combines with the imperfectly combined oxygen in the blood, forms water, and is removed from the blood in the form of sweat or perspiration; while the oxygen of the water combines with the carbon of the blood, evolves heat, and is secreted in the form of carbonic acid gas.

The attention of the reader is invited to each of these essays.

After the employment of appropriate remedial agents, and the removal of the more manifest symptoms of fever, there often remains an impoverished condition of the blood, which is a fertile source of local dependent forms of disease, especially when, during the progress of fever, a chill from time to time occurs. This condition of the blood is *sensitively* evinced by lesion of nutrition, loss of nervous energy, want of appetite, muscular debility, and more or less perversion of secretion; and *it is caused by deficient developmental intensity of the molecular combinations of the elements of the blood.*

The large proportion of albumen generally found in this morbid condition of the blood, is the result of defective cell-growth; because there is more nutritive material in the serum than could have remained there, if the normal proportion of blood-cells had been developed out of it. The evidence is, therefore, almost conclusive, that the albumen which exists in the blood does not grow and mature normally, or it would be consumed by molecular combination.

The causes of fever, how slight soever they be, retard the developmental intensity and activity of the blood cells; and if they be long continued, frequently repeated, or of great disturbing force, they impair the normal molecular changes of the blood, and transmute them, with more or less celerity, into the different forms of chemical force, when life may soon become extinguished. If the abnormal mutations be arrested, a period of time must transpire before the different forms of the organizing force of the automatic nervous system can attain normal tranquillity and intensity; because the tissue of this system has suffered for normal nutrition; and its different forms of force have been so disturbed and so transmuted, that time is required for them to regain normal intensity and a controlling influence over the molecular combinations of the blood.

When this is obtained, all the forms of the organizing force are united in purpose, harmonious in action, and conspire to promote the conservation and well-being of the organism. But they require organizable elements to elicit their action; and the lesion of nutrition opposes the attainment of this grand object by not supplying all the constituents necessary to the developmental intensity of the blood-cells.

Although so minute, these cells always act harmoniously; they elaborate the constituents of the blood in a continued series of succession; each performs a definite and distinct duty; but the blood must contain all the elements, of which the tissues are composed, or these cells cannot be normally transformed and rearranged; they cannot grow and mature normally, because the absence of a single organizable element would disturb the unity of purpose and the concert of action between the different forms of the organizing force, and thereby impede the molecular growth and development of the whole. This is precisely what always transpires during the incipiency of fever; and it is perpetuated throughout its course. The lesion of nutrition may be slight, but it is sufficient to produce and maintain the continued absence or immature condition of one or more constituents of the tissues.

The development of the blood must, therefore, be imperfect; and this imperfection will always be commensurate with the degree and duration of the nutritive lesion.

The dependence of the capillary circulation upon the normal molecular combinations of the elements of the blood always produces a lesion of this circulation proportionate to the abnormal mutations, which transpire from imperfect development of the globules.

There is, therefore, always present more or less anæmia in fever; because the morbid changes of the molecular combinations of the constituents of the blood prevent its introduction into the capillaries in normal quantity by *nutritive attraction;* and although the arterial system may be bounding and throbbing, these vessels convey an absolutely diminished quantity of blood to the capillaries.

The mechanical force of the muscular action of the heart and arteries is derived from the cellular changes of the elements of the blood at the ultimate termination of their muscular fibres; so that it must be diminished in intensity when these molecular mutations do not take place with normal force and celerity from deficient development of the globules.

Enfeebled action of the heart and arteries is, therefore, always present in fever. Their mechanical force is diminished; they only propel a quantity of blood to the external capillaries equal to their propulsive intensity; and as this is not equal to the whole quantity of the blood, a certain portion must regurgitate from the heart, at each systole, into the portal venous system.

The morbid accumulation of blood in this venous system produces an anæmic state of the external capillaries.

These abnormal states of the circulation perpetuate fever, because only a small quantity of nutritive material can be elaborated and introduced into the blood on account of the capillary lesions; and the molecular mutations of the blood in the depuratory glands are, consequently, so abnormal, that what already exists is very imperfectly depurated.

Only a limited quantity of oxygen is absorbed; but that which is received is not normally consumed by combination. Imperfectly consumed by combination, it combines with the solid tissues, producing their death and decomposition by conversion into lifeless compounds.

Fever, attended by the symptoms which arise from these states of the solid and fluid tissues, is called typhus or typhoid. It is frequently observed in the southwestern States in the autumn, when the days are hot and the nights cool, especially if fever with intermittent symptoms prevailed during the preceding summer.

Throughout the southwestern States, fever, with chills at irregular periods, is often of protracted duration; and, during its course, the spleen is liable to become hypertrophied, and the blood poor and attenuated. When the spleen is greatly hypertrophied, and soft and yielding upon pressure, large granular globules, two or three times the size of the natural colourless corpuscles, may frequently be observed in great abundance in the blood; and usually the ordinary colourless corpuscles are in great excess in this condition of the spleen. Southwestern physicians, who have *unfortunately* employed bleeding from a large orifice in the treatment of inflammation of the lungs, when the spleen is in this pathological condition, can bear witness to the frequency of these appearances of the blood.

When this pathological state of the blood exists, the hepatic functions are always more or less disturbed by the morbid accumulation of blood altered in quality in the hepatic capillaries. This disturbance, when it is of long duration, is usually manifested by a yellow appearance of the skin, clay-coloured discharges from the bowels, and scant high-coloured urine, alternated with green fetid evacuations from the bowels, and large quantities of yellow sedimentary urine.

A serous diarrhœa sometimes supervenes upon these conditions, when the sufferer is rapidly exhausted by the continuous drain of serum. Cruveilhier, Becquerel and Rodier, Andral and Gavarret, have conclusively shown that the attenuation of the blood by bleeding decreases the quantity of the corpuscles, while the other constituents undergo little change in their proportion either to each other or to the entire mass.

The same law prevails in respect to hemorrhage and many exhaustive forms of disease. The attention of the profession is particularly invited to menorrhagia, as it affects women who reside on our southwestern alluvion *bottoms.* With them the hemorrhage often alternates with serous diarrhœa, when general anæmia is soon produced and pervades every tissue of her organism.

The human female has a peculiar law of blood-development. During about thirty years of her life she forms blood enough for herself and an infant. If she be pregnant or suckling, this redundant blood formation fulfils its purposes by nourishing her organism and that of her infant; but if she be neither pregnant nor suckling, the large blood formation, which is normal to her for these purposes, becomes excessive in their absence, and tends to effect its own cure by means of recurrent hemorrhage from the mucous membrane of the uterus, which attends the discharge of unfertilized ova from the Graafian vesicles, and constitutes menstruation when it is normal, and menorrhagia when it is abnormal from the excessive quantity of blood discharged. Lesions of this process most usually occur from general causes affecting the development of the blood; and among these, in the southwestern States, the most universal are those vicissitudes of the atmosphere which produce fever. The morbid influences of the climate or locality impoverish the blood and produce the pathological conditions which arise from the want of cell development of the blood-corpuscles.

The anæmia which so often takes place about the period of puberty in young women in the western States, consists essentially in deficient growth of blood-cells; and it is of much more frequent occurrence than is generally apprehended. During the autumn, teething children often suffer of a serous diarrhœa of protracted duration. This is perpetuated by the want of developmental activity of the globules.

The physiological effects of iron conclusively evince, that it promotes the development of the blood-cells and accelerates their maturity. This is in accordance with a general law of the human organism, that the specific stimulants of cell growth in every tissue are elements identical with the natural contents of the cells, or convertible into them.

The globules of the blood contain increments of iron obtained from the food; and from the physiological fact that these are always present in normal blood, it is self-evident that iron is absolutely necessary to animal life.

From the physiological fact that the globules do not contribute to the nutrition of the tissues until they have attained maturity; that they will not mature normally without certain increments of iron; that when these are normally present they greatly promote the developmental intensity and activity of the blood-cells; that they increase the capacity of these cells for the absorption of the oxygen of the atmosphere and for the secretion of carbonic acid gas from the blood, by which the globules assume a bright-red colour; that the blood in this manner oxidized is conveyed and introduced into the capillaries, in which its elements are transformed, matured, and appropriated to the nutrition of the tissues, evolves animal heat, and absorbs the effete constituents of the transformed tissues; and that the pathological states which are produced are those which are dependent on imperfect molecular development of the globules, and the consequent deficient oxidation and depuration of the blood; we can appreciate the causes of the perverted condition of the different forms of the automatic nervous force, the abnormal forms this force assumes in the molecular combination of the elements of the blood, when all development is deficient, and the best means to effect its tranquillity and early restoration.

Iron is the most efficient agent to promote the normal restoration of these lesions, because it supplies the element required to promote the growth and maturity of the protein globules. The effects of few medicinal substances are more immediate or more remarkable than that which results in disease from deficient cell development from the exhibition of iron.

Every physician has observed how soon, under the influence of this remedy, patients recover their natural complexion. A chemical analysis of the blood explains this sufficiently. F. Simon relates a case in which, after a few weeks of treatment, the proportion of blood globules rose from 32 to 95 in the thousand; Herberger, one in which it rose from 38 to 98; Andral, one in which it rose from 46 to 95.

Iron is seldom administered in a metallic state. It is usually oxidized, and combined with a vegetable or mineral acid. The compounds formed by combination of iron with the vegetable acids are less powerful and efficient than those by mineral acids. The citrate and tartrate of iron are mild in their action, and they may, therefore, often be given before the stronger compounds. We not unfrequently observe that the stronger compounds of iron, when first administered, apparently increase all the anæmic symptoms, especially those referable to the stomach and head. The potassio-tartrate of iron may be given along with the bitartrate of potassa, when there is œdema of the ankles, or of the cellular tissue generally. This is a valuable compound of iron in the anæmia of females, when there is local effusion in the cellular tissue.

Several of the compounds of iron are often given in larger doses than is necessary when the design is to promote the absorption of the iron into the blood. This observation applies especially to the carbonate, sulphate, and muriated tincture. The regeneration of the globules, when much diminished in quantity and altered in quality, must require considerable time.

That the efficacy of a ferruginous compound is not in proportion to the quantity of iron it contains is shown by the fact that many mineral waters are very powerful, though they contain less than a grain in the pint. This fact clearly evinces the necessity of the greatest care in the selection of the compound we are about to employ; because the efficacy of iron often depends on the compound used and its mode of administration. Deficient cell-growth, which occasions the necessity for the employment of iron, causes a vast multiplicity of symptoms, which are produced by the functional disturbance of the visceral glands. The compound of iron should, as nearly as possible, be adapted to the particular state of the digestive organs, that it may be readily absorbed and elaborated with the nutritive elements of the blood; for this is the only mode by which iron can promote the growth and maturity of the blood. Sir James Murray first recommended the administration of iron in the following mode: Dissolve one drachm of the bicarbonate of soda in four ounces of water; then add to this one drachm of the muriated tincture of iron. The draught should be taken during effervescence. It should be repeated three or four times a day. Although the quantity of iron is small, yet it is in a state of subdivision so minute as to favour greatly the absorption of each increment. The double decomposition which takes place forms, as one of its products, muriate of soda. This saline is most congenial to the development of the globules.

During the protracted continuance of fever, diarrhœa, dysentery, or any other form of disease, during the autumn or winter in the Southwest, the use of iron according to this suggestion of Sir James Murray, is often attended with the greatest efficacy, especially when the fever, or other form of disease, assumes what is usually termed a typhoid form. The iron should be administered every three or four hours, alternated with other appropriate remedies. The minute quantities of iron and muriate of soda thus presented to the digestive and absorbent glands, which have been so long deranged and weakened, stimulate and promote the growth and maturity of their cells, and thereby favour the digestion and accelerate the absorption of any nutritive or medicinal substance. This will be clearly evinced by the increased secretion, which will take place in a day or two from the beginning of the use of the iron. The biliary, urinary, and cutaneous secretions will be greatly augmented; the tongue will become more moist, the thirst less urgent, and the sleep more tranquil.

When inflammation exists, iron should be used cautiously and carefully. When fever, dysentery, or diarrhœa assumes what is called a *typhoid* state, iron is of the greatest efficacy, because it stimulates and promotes the growth and maturity of the blood-cells. The matured blood-cells absorb and elaborate more oxygen from the atmosphere; an increased transformation of the elements of the blood ensue; the capillary circulation is accelerated and augmented, and increased secretion from all the depuratory glandular systems takes place.

When a typhoid state exists in any form of disease, western physicians have often prescribed for several days without observing scarcely any effect from the medicine they had directed. Let them employ iron, as here directed, and, in a day or two, each medicinal article will begin to manifest its characteristic effects on the organism.

Muriated tincture of iron is a very efficacious compound in the treatment of menorrhagia. Its use should be continued for a considerable time. It may often be employed with the greatest advantage in fever with typhoid symptoms.

*Iodide* of iron is a preparation which combines in some degree the properties of iodine with those of iron, though the latter predominate. It seems to promote the secretions more than any other compound of iron. When it is not too stimulating it is one of the best tonics in the anæmia of phthisis and scrofula; and from my experience of its effects in these affections in this climate, it is *never* too stimulating. It may be advantageously employed in all cases of anæmia combined with enlargement of the lymphatic glands. It changes the molecular condition of indurated glands and promotes their absorption. It may be used advantageously in the chronic form of *many* diseases, in which calomel *should* have been employed during the acute state.

The citrated aromatic wine of iron possesses the most agreeable odor and taste of any medicinal compound of iron. It is seldom rejected by the most delicate stomach. I have directed it for children and young persons in various forms of disease with debility, and I have never found it disliked or rejected, and its repetition is most generally desired.

When excessive secretion from a relaxed state of the mucous membrane in chronic bronchitis exists, combined with wine of ipecacuanha, it is of peculiar efficacy. In all diseases which arise from deficient developmental activity of the blood-cells, it is a remedy of great value. There are many other compounds of iron of peculiar value and great efficacy; but I cannot extend the limits of this paper by a definite notice of them.

When we contemplate the effects of the climate of the alluvion districts in the southwestern States in the production of an impoverished condition of the blood, the frequency with which this state of the blood is met with in these localities, and its injurious consequences to the organism when allowed to continue, the value of iron in the promotion of the growth and maturity of the blood-cells, and the consequent removal of this condition of the blood, can scarcely be sufficiently appreciated.

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## ART. IV.—*Glycerine as a Local Application in Pseudo-Membranous Croup.*

By E. R. MAYER, M. D., of Wilkesbarre, Pa.

I HAVE lately, on several occasions, made use of glycerine as a local application in the treatment of membranous croup, with such apparent advantage as to lead me to think its employment as an aid to the management of this formidable disease, worthy of recommendation to the notice of the profession.

I was induced to make a trial of this liquid from having frequently observed the great relief obtained by its being snuffed up or injected into the nostrils in those frequently encountered forms of ozænoid disease in which the excretion hardens and dries, forming solid plugs or tubular casts of the nasal fossæ, analogous in compactness and tenacity, if unlike in composition and mode of formation, to the false membrane of croup. In such cases, the injection of warm water often fails to enable the patient to get rid of the accumulation; but the contact of a little glycerine is soon followed by the expulsion of the offending substance in a softened state and by relief of the irritation caused by its presence.

Glycerine is not only remarkable for its bland, solvent and undrying properties, and the completeness with which it sheathes surfaces exposed to its action, but for its wonderful power of adhesion, extension and penetration, particularly when applied to a mucous surface. These latter properties it has in so great a degree, that it is only necessary to apply it to a portion of a continuous secreting surface in order to secure its rapid contact with other adjacent parts of the same which may not be within reach of its convenient application. To effect its introduction into the larynx, for instance, it is not absolutely necessary to use the modes of local laryngeal medication now so much in vogue, however advantageous these may be; for its mere apposition, in any quantity, to the rima glottidis, or to the nearly adjoining surfaces, is followed by its immediate entrance into the cavity, without provoking, to any extent, the spasm and violent convulsive cough always caused by the forcible introduction of a probang sponge into the orifice. An evidence of the facility with which glycerine travels along a moist surface and extends its influence from the fauces into the larynx, is derived from the fact that if the inferior article of commerce—which has not been entirely deprived of the irritating sulphur compounds generated during the process of separating the lead from it—be forcibly snuffed up the nostrils or even applied to the pharynx or base of the tongue, a sensation of something "going down the wrong way," and a violent paroxysm of coughing are generally produced.

In pseudo-membranous croup, the larynx is lined with an excretion scarcely more consistent or more adherent to the formative surface than that which is sometimes found upon the pituitary membrane in the cases above referred to. If the morbid product is capable of being softened down by the contact of glycerine in the one case, even in a much less degree than in the other, and if it be possible to keep the laryngeal surface bathed in the liquid for a time, it seems manifest that a great obstacle to the expulsion of the former by coughing or vomiting, and with it one of the greatest sources of danger to the patient may be removed. My experience of the use of this remedy is too limited to enable me to furnish any considerable number of cases advantageously treated by it, but is still sufficient to lead me to believe that it meets the above-mentioned requirements, and to suggest further trials of it.

I have several times during the last year applied glycerine with some apparent benefit to the fauces and larynx in mild cases of membranous croup and of other laryngeal difficulty; but as the local means were only used as a palliative after the urgent symptoms had yielded to other active treatment, I cannot rely upon the results as bearing upon this subject, and will confine myself to a notice of two cases of very recent occurrence. These were exceedingly severe and well marked cases, occurring within a few days of each other; the one, that of a boy, 18 months old; the other that of a girl 4 years old. The disease was developed in both during the decline of the eruption of measles, in each showed the characteristic fever, expression and movements, cough and respiration, the excretion being visible in the fauces in the case of the older child. Suffocation seemed imminent in both cases, when I saw them some five or six hours after the parents first became alarmed. The treatment consisted in prompt emesis by from two to four grains of sulphate of copper, by which the severity of the symptoms was mitigated, and afterwards in the rapid introduction of calomel into the system, in the use of from one to three grains of sulphate of copper dissolved in water every two or three hours, in the administration as often, but alternating with it, of tartar emetic in nauseating doses, and of that still more efficient sedative, the veratrum viride, in doses of from two to four drops of the fluid extract, for the purpose of lowering the circulation. Small blisters were also applied over the upper part of the sternum, and the application of pure glycerine to the rima glottidis was commenced and repeated at intervals whenever its use was called for by a return or increase of the brassy, ringing cough, or crowing respiration. Its application was in each instance soon followed by a manifest softening of the tone of breathing and cough, and by considerable reduction of dyspnœa and general distress. After its use in the first instance, I was forcibly reminded of the "dry pump sound," which the croupy respiration is said to resemble, and was led to carry out the simile by the notion that the lessening of harshness of sound was almost as great after the application to the throat as it would be after oiling the dry valves and washer of the piston.

The improvement in the character of respiration continued after each employment of the glycerine usually for a few hours; but, notwithstanding the short duration of the benefit thus obtained, I found it possible in each case, by frequently repeating the appliance, to keep the disease in check and lessen the local irritation, so as to let the patient enjoy a certain average of relief throughout the illness, or until the system became sufficiently improved by the constitutional treatment. The results were, in the case of the younger child, the expectoration of softened false membrane in shreds and patches—a genuine *detritus*, mixed with altered mucus and a little dark blood, twenty hours after the applications were commenced, and in the other case relief in the same way on the fifth day of the disease, the little patient's constitution resisting powerfully the action of the depressing means. The croup symptoms did not entirely disappear in either case until a day or two after the expulsion of the false membranes, but the patients were soon convalescent. Expectoration was promoted and recovery hastened by the administration of small doses of quinia and of chlorate of potassa with syrup of senega.

I made use of Price's Candle Company's glycerine, an article much superior to any that I have seen, and applied it by pressing down and drawing forward the tongue with the finger, and squeezing out the contents of a long and thick camel's-hair brush, dipped in the liquid, over the chink of the glottis, or as near it as possible, concluding the operation by swabbing the whole throat. I was prepared to employ a sponge attached to a piece of curved whalebone, but was so well satisfied with my success with the brush, that I did not think it necessary to use the former. The sponge or charpie, imbued with glycerine, will doubtless be preferred in many cases, and may be required in some.

If I am not mistaken in my opinion of the advantages resulting from this mode of treatment, it is evidently applicable to other diseased states of the respiratory passages.

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## ART. V.—*On the Local Application of Belladonna with Mercurial Ointment in the Treatment of Croup.* By JOHN D. SHELTON, M.D., of Jamaica, Queen's County, New York.

SOME three years ago, in a case of inflammatory croup which I was treating, the idea occurred to me that, in addition to the ordinary treatment which

I was pursuing with considerable activity, I might, perhaps, derive much benefit from the local application of a combination of belladonna and mercurial ointment; supposing that, besides the powerful influence produced by the local absorption of the mercury the relaxing effect of the narcotic, no less than its peculiar influence on the mucous lining of the throat would be produced, and that the combined impression thus made on the disease would at least materially aid the internal remedies.

I accordingly put the idea into immediate practical operation, and as I supposed with at least some benefit. The preparation used was the following: ℞.—Ext. belladonna ʒij; Ung. hydrarg. mite ʒvi.—M. This was rubbed freely every two hours on the sound skin over the trachea.

I used this application in the same way afterwards in one or two other cases, and finding the result justified my anticipation, at least measurably, I reported the cases at a meeting of the Queen's County Medical Society, held not long afterward—with the request that if any gentleman should see fit to employ it, and should derive any benefit from it, he would report his experience.

My friend, Dr. William Stren, of Oysterbury, having been called not long afterwards to a case of croup in consultation, recommended the use of this application; but, whether from misunderstanding my remarks or as an improvement of his own I know not, advised the ointment to be applied to a blistered surface. I subjoin the following report of this case, with which Dr. S. has kindly favoured me, in his own words:—

"The case to which you refer occurred in the adjoining village of Cold Spring, under the care of Dr. Fernan, in a healthy looking boy of four years, who was suffering with the usual symptoms of cynanche trachealis.

"He had been treated with the usual remedies in such cases, including calomel and ipecac, for some three or four days, when his symptoms became so aggravated that I was called in consultation in regard to the operation of tracheotomy.

"When I saw him, which was about 8 A. M., his breathing was very laborious, with sonorous inspiration, and from the anxious expression of his countenance you would have supposed suffocation inevitable. He had been freely vomited through the night and also that morning, and had just had applied to the throat a blister of cantharides. There was a disposition on the part of the friends to defer the operation as long as possible, if there was the least possible chance in any other means.

"I recollected your remarks in regard to the effect to be expected from the use of the ext. belladonna and mercurial ointment in such cases. I therefore advised Ext. belladonna ʒi; Ung. hydrarg. ʒiij.—M., to be immediately applied to the blistered surface, and promised to see him again at 4 P. M. Judge of my delight on my return to find every symptom of suffocation relieved; his breathing easy; his surface soft and relaxed, and from his disposition to doze, and the dilatation of the pupils, his whole system evidently under the specific effect of the belladonna. I therefore ordered the dressing removed, and simple sperm ointment applied; with directions to resume the belladonna ointment, if there should be any return of symptoms of suffocation. I saw him again the following morning, and found he had rested well through the most of the night. He now took a mixture of syrup of ipecac and squill to relieve the dryness of his throat. I discontinued my visits from this time, and the child convalesced rapidly."

In the early part of last winter (1856), I was called to an old lady whom I had attended on two previous occasions in severe attacks of acute laryngitis, and whom I then found suffering with a fresh attack of the same terrible disease. The symptoms were entire and persistent loss of voice—except in a whisper—a hoarse, barking, croupy cough; fever, dyspnœa, and suffocation, stridulous inspiration, and inflammation of the tonsils and epiglottis. On both the previous occasions I had applied a strong solution nitr. silver to the fauces and epiglottis, and blisters to the throat, besides the active and continued use of calomel, ipecac, and opium, with decoction of seneka and other expectorants internally. But on both these occasions the disease had proved obstinately stubborn, and the patient had barely escaped with life, having on one occasion been unable to speak above a whisper for upwards of three months. I attributed the recovery in these cases to the constitutional effect of mercury, pushed to ptyalism. On this occasion, I think in the month of January, 1856, as I took no notes of the case at the time, having now employed the local application of the belladonna and mercury in several cases with good effects, and fortified by Dr. Stren's astonishing case, I determined to commence my treatment with this application to a vesicated surface. The symptoms were precisely similar to those on the two previous occasions, with loss of voice, hoarse, barking cough, and suppurative dyspnœa. I applied a blister of cantharides forthwith, and ordered it dressed with the following: ℞.—Ext. belladonna ʒj; Ung. hydrarg. mite ʒij; Lard ℥j.—M. This application was made in the forenoon. Early in the evening of the same day I was hastily summoned; when I found my patient delirious, walking around the room, or rather staggering, catching at spectres, and with pupils largely dilated. She was fully under the influence of the narcotic, although, I must confess, it was not my intention to have produced this effect; at least, not to such an extent. Her friends were alarmed. I had her feet put in mustard water; gave her a weak solution of antimony, and bathed the forehead and temples with cold water. I should have added that her voice had returned, although hoarse from the peculiar effect of the drug on the mucous lining of the fauces and larynx.

The narcotic symptoms passed off during the night, and at my visit on the following morning, her voice was natural, and her breathing easy and natural. Recovery was prompt and uninterrupted.

On Sunday, Nov. 29, 1857, I was again called to a child of two years with croupy symptoms. In the same family, an older child was also affected with influenza and cough, and the old grandmother showed commencing symptoms of a fresh attack. The children gave way readily to a solution of antimony with Dover's powder at night and mustard foot-baths—but the old lady proved stubborn. She again had hoarse cough, with difficulty of respiration and of swallowing, and loss of voice. I examined her throat and found the tonsils and fauces inflamed and swollen. I gave her calomel and opium, an antimonial solution with strong decoction of seneka root. I also ordered the following: ℞.—Ext. belladonna ʒij; Ung. stramonium, Ung. hydrarg. mite, āā ℥ss.—M. to be thoroughly rubbed over the larynx and trachea every two hours; having first held to the throat, for a few moments, a sponge soaked with hot water. No benefit was, however, perceptible, and the symptoms were rather increasing in severity, when I applied a blister over the trachea (Wed., Dec. 2), and had it dressed with the following: ℞.—Ext. belladonna ʒss; Ung. hyd. mite ʒj; Lard ʒvi.—M. At my evening visit of the same day, I was delighted to find she had again recovered her voice and was evidently much relieved in all respects, although no other narcotic effects were perceptible from the belladonna than a feeling of confusion and giddiness, with some blindness, but no delirium or other alarming symptoms. I am most happy to add that the progress of this case to entire recovery has been, as on the former occasion, almost immediate and uninterrupted, as she continues at this date (Dec. 8) entirely well, having merely taken internally a decoction of seneka root and slippery elm bark.

I now feel it my duty to submit this treatment with these illustrative cases—few in number, it is true, but certainly strongly marked and highly gratifying—to the judgment of the profession, to be confirmed or condemned by a further and more ample experience.

The district of country in which it has been my lot to practise physic is a marshy and malarious one, about nine miles distant, north, from the sea. Surrounded by a belt of swampy and undrained low grounds, the constant exhalations from these, mingled with the sea air, produce a dampness in our atmosphere peculiarly favourable to the production, no less of intermittents than of throat affections. These latter are peculiarly rife. Although croup, as compared with other prevalent diseases here, is somewhat rare, yet, as compared with its occurrence in other places, it is, perhaps, somewhat frequent. In my treatment of this disease, although my main reliance has been on antimony and calomel combined with Dover's powder; and although a very large proportion of cases have yielded readily to these far-reaching and powerful means, yet I have had the distress and misfortune to be compelled to witness the death, by lingering strangulation, of a very considerable number of lovely children, during the last eighteen years, from this fearful disease, in which I had actively and faithfully, though vainly employed, I believe, every variety of treatment—save only tracheotomy—known to the profession. I have employed the turpeth mineral successfully in some cases, but with no benefit in others. I have succeeded in saving some cases by the topical application of nitrate of silver, but have had a number die in my hands where this remedy had been used freely. Of late, I had begun to turn my attention to tracheotomy as a last desperate resort, where death might seem inevitable without it. Whether the treatment which I now propose may be likely to prove a new and important addition to the list of remedies in this awful disease, and especially as a substitute for tracheotomy, I fear to speak with confidence; yet I cannot but indulge the hope that it may.

Why might not belladonna, from its peculiar effect on the throat, be advantageously administered internally in this disease, in conjunction with calomel and ipecac, and the other ordinary remedies?

I have never, as yet, employed it in this way myself; but I am strongly inclined to believe in bad cases it would materially increase the efficacy of the ordinary treatment. I have seen not the slightest allusion to its employment in this disease in any article or treatise I have as yet met with.

A valuable article on the employment of this narcotic in pertussis, was published by Dr. Hiram Corson, of Montgomery County, Pa., in the No. for Oct. 1852, of this Journal. In that article he ascribes the credit of that peculiar treatment in pertussis to Dr. Jackson, of Northumberland, and I can bear my testimony to its value in that disease. But no allusion whatever is made to its employment in croup. That it might control the paroxysms of laryngismus, might be readily conceived; but I think no person of ordinary acumen would confound the distinction between that disease and cases of a truly inflammatory affection, so well marked as those reported in this article.

*December* 9, 1857.

## ART. VI.—*Report of Cases treated at the Surgical Clinic of the University of Pennsylvania.* By J. J. WOODWARD, M. D., of Philadelphia, Assistant to the Surgical Clinic.

CASE I.—*Reduction of an Anterior Luxation of the Humerus of nearly four weeks' duration by manipulation, with the aid of Anæsthetics.*—The interest excited in the minds of surgeons by the success which has attended Reid's plan of reducing luxations of the head of the femur, renders important every attempt to carry out similar principles in the treatment of other luxations, because such attempts are indicative of the progress of scientific surgery, and the substitution of anatomical and physiological knowledge for the purely mechanical force which has hitherto characterized the treatment of these injuries.

The case which illustrates these points was presented to the medical class at the Surgical Clinic of the University of Pennsylvania, Jan. 6, 1858.

The patient, J. D., was a blacksmith by trade, æt. 35, of powerful frame and great muscular development, and the luxation, which was of more than *three weeks*' standing, affected the right shoulder, the head of the humerus resting beneath the clavicle and under the pectoral muscle.

Professor Henry H. Smith, in presenting the case to the class, stated that he had for some time thought that the treatment of luxations by manipulation alone, as recently described by Dr. Reid, of Rochester, in connection with the femur, might with great propriety be extended to other articulations, and he wished to test its applicability to the humerus in the present patient. He should especially hope for the success of proper manipulations in luxations of the shoulder, because the shallow glenoid cavity presented certainly less mechanical difficulty than the brim of the acetabulum, and judicious rotation would probably be sufficient to bring the head of the bone into its proper articular position.

The following plan for effecting the reduction of anterior displacements was therefore suggested. The patient being first fully etherized, the arm of the injured side was to be carried off from the body as nearly to a right angle as possible, and the forearm flexed at a right angle with the arm. Then using the forearm as a lever, the head of the humerus was to be rotated downwards and backwards, by causing the palm of the hand to describe an arc backwards and downwards, when, as was presumed, the head of the bone would without difficulty slip into the axilla. The rotation of the humerus being now carried a little further by continuing the motion of the forearm the head of the bone could, it was thought, be brought upon the inferior edge of the glenoid cavity, when a gentle reversion of the manipulation would cause it to slip into its place by bringing it to the anterior edge of the glenoid cavity at the point where the capsular ligament had been torn.

The patient being now etherized, Dr. D. H. Agnew, at the request of Dr. Smith, proceeded to practise the manipulation as suggested; when the head of the bone was readily thrown first into the axilla and afterwards into the glenoid cavity. During the manipulation the inferior angle of the scapula was steadied by the hand of an assistant.

The success of this mode of treatment is note worthy, not only on account of the great muscular development of the patient, but also because of the length of time which had elapsed since the occurrence of the injury, and the case is certainly well calculated to recommend the manipulations suggested by Prof. Smith to the favourable consideration of surgeons. Close attention should be given during the manipulation to the proper rotation of the head of the bone; its object being chiefly to modify the action of the supra and infra-spinatus muscles which are much stretched in all anterior and axillary luxations.

Case II.—*Chronic Hydrocele of large size cured in two weeks by Excision of the Tunica Vaginalis Testis.*—B. C., A carpenter by trade, about forty years of age, was presented at the Surgical Clinic, Wednesday, September 30, 1857, labouring under a hydrocele of great size, which had been previously tapped several times, and once injected with iodine in hopes of obtaining a radical cure. The effusion, however, had returned in spite of treatment, and the tumour had now regained its original bulk containing over twenty ounces of serum.

The patient being fully etherized, the operation consisted in slitting up the tumour with a sharp-pointed bistoury to the extent of three inches and a half, thus permitting its liquid contents to escape; after which the tunica vaginalis was rapidly dissected free from its attachments to the scrotum and excised with scissors, except that portion of it which was immediately connected with the testicle. The wound was then closed by sutures and adhesive plaster, except at its lower angle, into which a mesh of lint was inserted. It rapidly healed by the first intention, except this lower portion, which granulated, and was not entirely healed until about two weeks after the operation. No orchitis followed, and the patient was only confined to bed about four days.

Examination showed the excised portion of the tunica vaginalis to be thickened to the extent of $\frac{1}{8}$th to $\frac{1}{4}$th of an inch; the thickness being due to abundant new formation of white fibrous and yellow elastic tissue in various stages of development.

It will be perceived that this operation closely resembles that of Boyer (see Malgaigne's *Operative Surgery*, Philad. edit., p. 451), from which, however, it differs in certain points. Boyer completely dissected out the tunica vaginalis before it was incised, while it was still distended with fluid, and afterwards incising the tumour to permit the fluid to escape, he excised with scissors the part of the tunica vaginalis not connected with the testicle and cord. This method, while giving, perhaps, some facility to the separation of the scrotum from the tunica vaginalis, is objectionable, because it completely separates from the scrotum that part of the tunica vaginalis left in connection with the testicle and cord, which was not done in the operation practised in this case. Boyer's operation, therefore, would be more liable to be followed by orchitis, purulent infiltration of the scrotum, or sloughing, than that here reported.

Case III.—*Hydrocele cured by Excision of the Tunica Vaginalis.*—C. R., a German labourer, about fifty years of age, was operated upon Saturday, Nov. 28, 1857, at the Surgical Clinic. The tumour in this case was of great size, and had once been operated upon palliatively, but had since returned. The plan pursued was the same as that employed in the last case, and was equally successful, the patient not being confined to bed more than four or five days, and the wound being entirely healed in about two weeks from the date of the operation.

It is not claimed that the plan of treating hydrocele here detailed is new in principle, excision of a small part of the tunica vaginalis having been frequently practised, and Boyer's operation, of which this is but a modification, being well known to surgeons. The object in publishing these cases is, therefore, simply to call attention to the great *practical advantages* of excision in the treatment of hydrocele as it is believed to be at once more certain, safer and more speedy than the iodine injections so commonly employed. The patients being etherized, suffered but little from the operation.

Case IV.—*Epithelioma of the Lip of seven years' standing cured by the application of Powdered Sulphate of Zinc.*—Mrs. S., æt. about 55 years, was presented at the Surgical Clinic, Saturday, Dec. 5, 1857. She had a well-marked epithelioma on the upper lip of a triangular form, extending from the angle of the mouth to the ala of the nose, thus occupying the greater part of this side of the lip. The growth was nodulated and irregular, and its surface ulcerated. The free margin of the lip was indurated, and the case being of seven years' standing, certainly appeared an unfavourable one.

In accordance with a suggestion made some time since by Prof. Simpson, Edinburgh, the ulcerated surface was dusted freely with the dry sulphate of zinc reduced to a fine powder. Over this a piece of lint was placed, which was secured in position by being saturated with collodion. This dressing was retained for about a week, when it was loosened by the discharge of the ulcer and came away. It was reapplied as before, and so on during nearly two months, at the end of which time the growth had entirely disappeared and the ulcer was healed, presenting a normal cicatrix. There was no serious puckering or deformity of the lip, and the cure was apparently quite complete. Little or no pain was produced at any time by the application.

## ART. VII.—*Medical and Surgical Notes of Campaigns in the War with Mexico, during the years* 1845, 1846, 1847, *and* 1848. By JOHN B. PORTER, M. D., Surgeon U. S. Army.

(Concluded from *Journal* of October, 1853.)

A BRIEF review of the diseases of our army at the close of the war in 1848, will conclude our remarks.

On the return of our army to the United States, in the year above mentioned, an encampment of regular regiments was formed at East Pascagoula, Mississippi. This summer resort is situated on Pascagoula Bay, near the mouth of Pascagoula River, about sixty miles from Mobile, and one hundred and twenty from New Orleans. The village stands on a somewhat elevated ground or bluff, which gradually slopes about two miles to Green Wood Island, which is low and flat, so that high winds during storms sometimes drive the waves over it, as in 1821 and 1853, in which years it was submerged. On this island the General Hospital for the encampment was established.

In the first part of July, the regiments began to arrive at Pascagoula, direct from Mexico; and, by the end of the month, the encampment, consisting of five regiments of infantry, was fully formed, extending from the outskirts of the village to within one-quarter of a mile of Green Wood Island. Seven companies of dragoons were encamped on the other side of the village, two or three miles south of the hotel. Brevet Major-General Twiggs commanded the whole.

The troops arrived at Pascagoula in bad condition. The men were suffering from chronic diarrhœa, chronic dysentery, and a scorbutic diathesis.

Chronic diarrhœa and chronic dysentery were much the most common diseases in the encampment. The following extract is taken from my reports to the Surgeon-General:—

> "From the arrival of the regiments, patients rapidly multiplied, and the cases were of the worst description, being mostly chronic bowel affections. For a large number of these cases medical treatment was useless, further than to render the situation of the patient as comfortable as possible.
>
> "Many of the men who were admitted into hospital, with chronic diarrhœa and dysentery, date the commencement of their complaint three, four, six, ten, and even thirteen months anterior to their arrival at this point; numbers of these men were emaciated to the last degree, being literally 'skin and bones,' and in some of the patients it seemed as if the loose integuments could be easily made to form a second covering for the attenuated limbs. It must be evident that a great amount of labour was required of the hospital attendants, to render the patients comfortable and keep the hospital in decent police—the clothing and bedding of the sick having to be frequently changed. One patient required three complete changes in twenty-four hours—to the very bedstead—for several days, and even then it was scarcely possible to keep him in a decent condition. These chronic diseases originated at all points on General Scott's line of operations.
>
> "The treatment of confirmed diarrhœa and dysentery of long standing is very unsatisfactory in its results. The changes have been rung on all the remedies recommended for such diseases.
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> "Several autopsies were made during the season. In most, ulceration of the large intestines was found, to a greater or less extent; but, in some cases of long standing, when the patient would seem to be almost or quite cured of the bowel affection, emaciation would increase, and the patient sink from sheer exhaustion apparently; in these cases ulceration might not be found, but there was almost always a morbid condition of the mesenteric glands; want of nutrition seemed to be the cause of death, the patient at last dying of inanition, the system subsisting on itself until extreme emaciation and death were the result."[1]

Yellow fever prevailed to some extent, and was malignant. To the contagionist it may occur that the disease was imported from Vera Cruz, New Orleans, or Mobile; but this is not the fact. The first case, private John Martin, Third Infantry, was admitted into hospital, September 3, from the head-quarters of General Twiggs, which were between one-fourth and one-half mile from the Pascagoula Hotel. Martin was General Twiggs's orderly. The regiments marched directly through Vera Cruz, without stopping in that town, and went on board ship to the port of destination. None of the regiments went to New Orleans or Mobile, but the transport ships sailed from Vera Cruz to Pascagoula direct. The Third Infantry arrived and placed the sick in hospital on the 21st of July; Martin was taken sick on the 1st of September, and was attended until the 3d by a regimental surgeon—was in the second stage of the disease when he came to hospital. Recovered.

From the 21st of July to the 1st of September, there are forty-two days;

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[1] In some cases, the liver was enlarged, of a yellowish or clay colour, dry, friable, anæmic, the gall-bladder nearly empty. Mucous membrane of the stomach eroded, softened, and easily scraped from the subjacent coat: same membrane of the lower portions of the small intestines injected. Kidney congested; spleen enlarged and congested.

add eight days for an average passage from Vera Cruz, which is a good run for a sailing vessel, and we have fifty days from Vera Cruz to the first case in the camp at Pascagoula. The troops came from Vera Cruz in a perfect state of health, so far as fever was concerned. The transport ships were clean and in good condition; they could not get nearer to Pascagoula than three or four miles, by reason of the shoal water; and the troops, baggage, stores, &c., were transferred to light draught steamers. The fever was of local or domestic origin, and there is no probability of its having been imported from any place whatever.

The second case of yellow fever was admitted into hospital from the Fourth Infantry, on the 10th of September, and on the 11th two cases were admitted from the Second Infantry. From this time, scattering cases of this fever occurred in all parts of camp, and the last one was taken sick on the 19th of November.

Fever was somewhat prevalent during this season on the coast of the Gulf of Mexico. There was yellow fever in New Orleans and Mobile, and in the country around Pascagoula there were several remittent and congestive fevers. In several instances, these fevers assumed the yellow fever type.

The whole number of yellow fever cases admitted into hospital among soldiers, discharged men and teamsters, was 32. Add 5 cases among hospital matrons, and we have 37 cases in all. It can scarcely be contended that a disease is contagious when only thirty-seven cases occurred in more than two and a half months. From the first of September, the contagion should have gradually and surely spread, so that in two months, or by the first of November, a large proportion of the troops and camp followers should have contracted the disease, and no one connected with the hospital should have escaped. It is the duty of hospital matrons in the army to do the hospital washing; 5 of them had yellow fever, 9 of them had no fever of any type. It is incredible, that a contagious fever should appear in a camp filled with hundreds of persons of all classes; and that only thirty-seven cases of this malignant and contagious fever should occur. We would say, unhesitatingly, that such a disease is not contagious.

A negro man died of yellow fever in October, on the main land, more than two miles from the hospital, and at least four miles from Pascagoula. This man often came to Green Wood Island, to supply the hospital with necessaries, and hence it might be inferred that he contracted a contagious fever from the patients; but if this were the fact, the case is not altered. How could the man's wife, children, and many other persons, both white and coloured, who were in the house during his illness, escape the disease?

The last case of yellow fever occurred on the 19th of November, as before stated, in the person of private John Kauffold, Third Infantry. Orders came from General Taylor to break up the hospital and transfer the sick to New Orleans Barracks, and on the 23d—Kauffold being in a critical situation—they were put on board a steamer. He was very sick—had hemorrhage and every symptom of the fever except black vomit, and was placed in the hospital of New Orleans Barracks on the 26th, with other sick and invalids. Hemorrhage continued, and there was no visible improvement in the patient's condition until two or three days after his arrival. He recovered. Not a single case of yellow fever occurred afterwards on the steamer, nor was there a case at New Orleans Barracks, in consequence of shipping this man and putting him in hospital with others.

We came to the following conclusions:—

1. None of the transports were infected, nor was there a case of yellow fever heard of afterwards in any of them.
2. The yellow fever was not imported from Vera Cruz, nor was it brought from any other place.
3. The fever was of local or domestic origin.
4. The fever was not contagious.

We have been particular in giving the origin and history of this fever, for it is commonly asserted that yellow fever never originates at the villages and watering places "over the lake;" but that the disease has been, in all cases, carried from New Orleans; and that, hence, it is contagious.

We (Assistant Surgeons Perin and Stone and myself) made several autopsies. Heart apparently healthy, containing coagulated blood. Lungs in general healthy: in one case there were recent adhesions of the right lung to the costal pleura, and hepatization. In every case we found an inflammatory condition of the mucous membrane of the stomach—the inflammation being in some cases pretty general and sometimes more intense at some points than at others, softening, abrasions, &c. In some cases the membrane was so much softened as to be easily rubbed off or separated. In almost every instance the matter of black vomit was found, whether the patient had thrown it up or not. The liver was anæmic, often dry and friable, and presented, on being cut into, more the appearance of *ginger-bread* than anything it can be compared with. Gall-bladder often nearly empty, sometimes partly filled with dark bile. Spleen generally enlarged, congested, and sometimes softened. Kidneys congested. The brain and spinal column were not examined, on account of our numerous engagements and hard duty.

*Consolidated Report of Sick, Mortality, &c.*

| | |
|---|---|
| Whole number of cases | 757 |
| " " deaths | 137 |
| Mortality per cent. | 18.10 |
| No. of fever cases | 98 |
| " deaths | 22 |
| Mortality per cent. | 22.44 |
| No. of fever cases, exclusive of yellow fever | 66 |
| " deaths | 8 |
| Mortality per cent. | 12.12 |
| No. cases of yellow fever | 32 |
| " of deaths | 14 |
| Mortality per cent. | 43.75 |

| | |
|---|---|
| No. cases of diarrhœa and dysentery | 449 |
| " of deaths | 100 |
| Mortality per cent. | 22.27 |

Add to the yellow fever table 5 hospital matrons, who had the disease, and one death, and we have 37 cases and 15 deaths—a mortality of 40.54 per cent. To be strictly correct, however, there were 6 cases of yellow fever and 1 death among the matrons, making 38 cases in all, 15 deaths, and a mortality per cent. of 39.47 The matron who died had two distinct attacks of the fever, with a considerable interval between them. This case was sufficiently alluded to in a former paper.

The mortality from all diseases was aggravated by the scorbutic diathesis, so prevalent among the troops. A person with this diathesis, and suffering at the same time from chronic disease of the bowels, could stand but a poor chance when attacked by yellow fever.

It appears, then, that the yellow fever was not imported into the camp at Pascagoula from abroad; that the fever did not spread in the camp generally, nor among the inhabitants of the vicinity; and that a case of malignant fever (introduced from Pascagoula) did not affect the troops at New Orleans Barracks, although the garrison consisted of two companies of unacclimated men, who had never been exposed to the disease. I had charge of the General Hospital, organized it, and remained with it until the sick were removed to New Orleans Barracks; and it is my opinion, that the fever at Pascagoula was of local or domestic origin.

Yellow fever occurred at New Orleans Barracks in the years 1847 and 1848, among invalids and others; and as it was contended by some that the disease was imported to New Orleans by the troops from Mexico, and spread by contagion, we will briefly examine into the circumstances attending the origin and progress of this fever at the barracks. The facts which will be presented, were obtained and committed to paper during the winter of 1848–9, from the hospital records and Surgeon W. S. Sloan, U. S. A., who gave much valuable information. The General Hospital at New Orleans Barracks was in charge of Surgeons R. C. Wood and W. S. Sloan, U. S. A., in 1847 and 1848.

| | | |
|---|---|---|
| 1847. Third quarter.— | No. of cases | 25 |
| | " deaths | ... |
| Fourth quarter.— | No. of cases | 13 |
| | " deaths | 8 |

Many of these cases supervened on other diseases, the patients having been admitted into hospital a considerable time previous to the attack of yellow fever. The first patient with yellow fever was a recruit belonging to the post; admitted August 26; recovered. He had never been to Mexico. The next case was admitted August 27, in a man who had been in Luzenburg's Hospital, N. O. The third and fourth cases were recruits of the Thirteenth Infantry, from Mobile; admitted September 8. They had not been in Mexico.

| | |
|---|---|
| 1848. Third quarter.—No. of cases | 8 |
| " deaths | 8 |
| Fourth quarter.—No. of cases | 3 |
| " deaths | 3 |

The first case was from a ship from a Mexican port; admitted July 9; died July 10. The four next cases came to hospital July 22, from a ship in the river, from Mexico. The next case was from a ship in the river, August 2. All of these men were in a desperate or dying condition when received into hospital. The next case was that of Assistant Surgeon Newton, U. S. A.; taken sick August 4; died August 9. Assistant Surgeon Sloan informed me that Dr. Newton probably contracted the disease by often walking to the city proper—a distance of nearly five miles—in the hot sun; nor was the fever attended to sufficiently early and perseveringly. The next case was that of a hospital attendant who had a severe frolic in the city; taken sick September 20; died September 26. These are all the cases in the third quarter.

The three cases in the fourth quarter of 1848, were Mexicans, belonging to the Spy Company, from General Scott's line of operations. This company was encamped near the barracks during the season. The men were idle, dissipated, continually drinking in town, and it is surprising that more of them were not seized with the fever. The three men, the subjects of these cases, were no exception to the above character. They were taken from the 1st to the 3d of October; died from the 3d to the 6th.

Perhaps there were cases, in both quarters, which might have been termed yellow fever, but they were not registered as such when the symptoms were light and the patient was labouring under some form of chronic disease. Every case of yellow fever on the hospital books is included.

Thus we have, in both 1847 and 1848, but 49 cases of yellow fever. In both years the barracks were filled with all classes of persons, and if yellow fever is contagious, why did not the disease spread universally? In 1848 there were only 11 cases, which were admitted into a hospital filled with patients, nurses, &c.; and it appears to me that a contagious disease ought, in such circumstances, to become general. No person attached to the hospital, in any capacity, had the disease in 1848, except the hospital attendant before mentioned, who had been on a drunken frolic in the city, unless we include Assistant Surgeon Newton. Such a disease cannot be contagious.

## ART. VIII.—*Case of Fracture of the Clavicle and Humerus of the same Side.*

By B. F. SCHNECK, M. D., of Lebanon, Pennsylvania.

A LITTLE daughter of Mr. Arnold, aged 5 years, was kicked, November 9, 1855, by a colt, upon the left arm in two places, as the marks indicated, upon the outside of the elbow just below the joint, and upon the arm immediately below the shoulder. The latter being a direct blow, gave rise to a fracture of the humerus above the deltoid insertion, close to the joint; the former, being a counter blow, was communicated to the clavicle, and resulted in a fracture of that bone at its middle.

Here was an unfortunate state of things, truly! How I could treat the fracture of the clavicle was a difficult question. The arm could not be used as a lever, to lift and keep the shoulder up, and out, and back; and in the nature of the case it seemed impossible to devise a substitute that shall accomplish the same end. It seemed possible to heal only one of the fractures well; and the patient will suffer less inconvenience from a badly adapted clavicle than humerus. Wishing time for reflection upon this unusual complication, I applied a cold water dressing, and put the arm in a sling until the next day.

In the interval I consulted, but in vain, all the accessible writers, in regard to this novel case. The appliances of Desault, Fox, and others, were prepared for no such patients; and in that storehouse of broken bones of the indefatigable Hamilton, I found no sample to match this. Believing that I had met with an almost unique case, I finally adopted Dr. Fox's apparatus, with such additions as I conceived necessary. It will thus be seen that, notwithstanding the fracture of the humerus, I nevertheless obtained the leverage required for the coaptation of the fragments of the clavicle, by the contrivance now to be detailed.

The arm, having been enveloped in a roller, was dressed as in an ordinary fracture of this bone, with four binders' board splints; and on the external splint was secured, by a few turns of a roller, a slightly hollowed wooden splint, of the whole length of the humerus. With this unyielding outer splint it was intended to prevent that external angular displacement which would otherwise be sure to follow the bringing down of the arm over the axillary pad. But the splint, at this stage of the process, would not yet be capable of preventing this salient angularity; but by the help of a broad belt of webbing (a saddle-girth in this instance), it was most effectually prevented. This girth, cut of the proper length, and fitted with a buckle, was made to surround the thorax, passing under the axilla of the sound side, and directly *over* and *upon* the seat of the fracture.

Thus, a not too thick axillary pad having been applied, the arm, secured and fortified as above described, was gradually brought down alongside of the body; while, by an assistant, the girth was tightened with every successive degree of adduction of the arm, until finally, this lever, though broken, was made to elevate successfully and bear the weight of the severed and drooping shoulder. With a little adjustment, the fractured clavicle was coapted, and remained so. An outward angular deviation of the arm being thus prevented by the wooden splint, which kept the fragments in a line parallel with itself (and which was really the lever, and not the arm), but mainly and entirely by the belt, which made its counter-pressure immediately over the seat of fracture, the indications were all fulfilled; and the case was committed to the care of Nature, who so well seconded the efforts of art as to have united the clavicle in two, and the humerus in four weeks, without any perceptible deformity or shortening of either bone.

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## ART. IX.—*Resection of the Femur, and Removal of the Trochanter Major for the formation of an Artificial Hip-joint.* By A. G. WALTER, Surgeon, Pittsburg, Pa.

SARAH McC., of Beaver Town, Beaver County, Pa., aged 22 years, of small stature, and delicate frame, with slender muscles, and highly nervous temperament, called on me in April last, wishing to have the left femur removed at the hip-joint, and gave the following history of her case: When five years old she fell, dislocating the hip-joint on the dorsum ilii, and, though unable to walk from the moment of the accident, yet her medical attendant treated her for rheumatism, the true nature of her case being overlooked. After six months' confinement to bed, suffering constant pain, which the anti-rheumatic treatment failed to relieve, she was allowed to go about on crutches, the limb being four inches shortened, the toes barely touching the ground. Some time after she exchanged the crutches for a high-heeled boot, and was thus enabled to walk with tolerable comfort. Two years ago she again fell on the same hip, and suffered severe pain in the joint. After some weeks' confinement to bed, the violence of the pain having subsided, she resumed her crutches; but on account of the contracted state of the muscles at the groin drawing the femur up to a right angle with the body, and the painfully dragging sensation at the hip-joint, locomotion was sickening and tiresome. A partial relief was obtained by supporting the limb with the left hand while taking exercise. From the strained position thus produced, together with the crouched posture assumed in bed to ease a tender joint, the chest, spinal column, and ossa ilii have become twisted and misshapen. There was continued pain in the whole limb even during rest; lying on the right side was alone practicable. Tired of her helpless condition, and worn out with suffering, exarticulation of the limb at the hip-joint appeared to her the only relief. Determined to submit to this, she sought admission into my hospital. On examination, I found a dislocation into the ischiatic notch, with anchylosis vera, and structural contraction of the adductor muscles, drawing the femur up to a right angle. Pressure upon the trochanter and rotary motion produced great pain from contact of the head of the femur with the ischiatic nerve. According to her statement, the configuration of the joint had become changed after the second fall, the pain shifted further back, luxation on the dorsum ilii having been converted to that into the ischiatic notch.

The distress and helplessness of the patient urged relief, but exarticulation of the femur in a person with a constitution so feeble and delicate, and such excitable nervous temperament, was not to be thought of; it was therefore proposed to establish an artificial joint at the trochanter by resection of the femur, which would straighten the limb, relieve the tension and dragging at the ischiatic notch, and enable her to walk on crutches with ease, the weight of the limb supported by its own muscles. To this a decided refusal was given. Nothing short of complete removal of the limb would satisfy our patient. Such determination in a frail woman was unexpected. The dangers incident to the operation, her enfeebled condition, and the certainty of affording relief by the formation of an artificial joint being fully explained, her consent at last was reluctantly given, but only on condition that the limb should be removed, if success did not follow the conservative operation. On the 23d of April, 1857, the patient resting on her right side, and being fully under the influence of chloroform, Doctors McGrath, Henderson, and Lusk assisting, an incision six inches long was made over the trochanter major in the longitudinal axis of the limb down to the bone, the femur was freed by slight touches of the knife and a bent probe from the surrounding muscles immediately below the trochanter, and sawn through by a chain-saw passed underneath it, in a slightly oblique direction from below and inwards, up and outwards. This section not facilitating the extension of the limb, the resected lower portion being arrested by the prominence of the trochanter major, this bone was next cut off by the chain-saw in an oblique direction outwards. The limb was now readily extended, and after closing the wound by sutures, the limb was encased in a hollow leather splint, reaching from the ankle to above the crest of the ilium. The head of the femur was not interfered with. After the operation an opiate was administered.

The resection of the trochanter was essential both for the free extension of the limb and accommodation of the oblique surface of the shaft of the femur upon a similar one of the trochanter, and for the induction of natural plasma from the opened cells of the trochanter to form an artificial joint which would be capable of bearing the weight of the body. A transverse section of the femur could not have answered the purpose, as in extending the limb the trochanter, neck, and head, being firmly fixed by anchylosis, the shaft of the femur would have come in contact with the unbroken surface of the trochanter major, which, covered with its periosteum, could not have assisted to offer the materials for the formation of an artificial joint. Very little blood was lost during the operation; some febrile reaction followed; a part of the wound closed by first intention; in the remainder, healthy suppuration was in due time established. The condition of the patient would have been comfortable but for her inability to rest on the back, on account of lardosis of the lower part of the spine, its lateral distortion, and the altered level of the ossa ilii, that of the left side being much lower. Owing to this distorted condition of the trunk, the splint greatly incommoding the patient, resting on her right side had to be removed; extension was maintained from the ankle; opiates were required to allay the irritation which position and temper produced, as well as to support the system. During the first week the case progressed favourably, suppuration being moderate; but early on the morning of the eighth day a violent chill, of nearly an hour's duration, set in, followed by fever and profuse perspiration, with a painful swelling on the inside of the femur below the groin, and sunken features; deep-seated suppuration and pyemia were dreaded. The chills did not return, yet the condition of the patient remained critical. The tongue became dry, red on tip and edges, the throat dry and clammy, appetite failed, the pulse small and very quick, decubitus on sacrum, and over trochanter of right limb; an abscess formed on the inside of the femur near the groin, from whence matter was discharged by pressure in large quantities through the wound. The pus, hitherto healthy, became thin, greenish, and offensive; thirst very urgent; great irritability and apprehension of death; bowels constipated. Chlorate of potass in 10 grain doses every three hours was administered to relieve the congested mucous membrane of the tongue and throat. Wine-whey and broths were freely given. An improvement gradually took place under this treatment. About three weeks after the operation the tongue had become moist again, and less red; the pulse less frequent and fuller; appetite had returned, and pus of a healthy character, and in less quantity, was discharged from the wound; bandaging from below up to the groin had closed the abscess; the wound was rapidly healing, and the limb was kept extended, and as much as possible everted. About a month after the operation, without any appreciable cause, there appeared a pulsating tumour in the abdomen, under the short ribs of the left side, near to the linea alba, simulating an aneurism of the abdominal aorta. In seven weeks the wound was almost closed, the appetite very good, bowels regular, tongue clean and moist, sleep natural, the pulsation in the abdominal tumour remaining unaltered, though rather less strong. The limb is movable at the artificial joint; is extended, and can be everted. Some days after, Miss McC. left for home with the prospect of the limb becoming useful. Several months later I saw her walking comfortably on crutches, relieved of a distressing deformity, and free from all pain and the dragging sensation at the anchylosed joint. The limb, about two inches shorter than the other, promises to become more useful in locomotion at a future day, when the newly formed artificial joint will have acquired more firmness to bear the weight of the body upon a high-heeled shoe without the aid of crutches.

The successful termination of this case is the more gratifying as it not only relieved Miss McC. of a painful and distressing deformity, but saved from mutilation, and probably from death, a feeble woman, who, worn out by sufferings and tired of life, had urged with strong determination and rare fortitude the performance of an operation which prudent surgeons will not rashly resort to. Nature, in her bounty, always ready to heal and repair injury, was not wanting in her efforts in this case to offer the materials for the new joint, and to perfect its formation, though, from the enfeebled condition of the patient, a very different result might have been anticipated.

*January*, 1858.

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## ART. X.—*Resection of the Lower Jaw for Necrosis caused by Inhalation of the Fumes of Phosphorus.* By WM. S. HALSEY, M. D., Prof. of Surgery in the Philadelphia College of Medicine.

JAMES McK., æt. about 40 years, is a match-manufacturer, and has followed the occupation steadily for fifteen years. In the factory in which he is engaged there are employed about thirty persons. McK.'s part of the business consisted in preparing and mixing the compound of phosphorus with which the matches are tipped, and in dipping the ends of the small pine sticks into this mixture.

In this process of preparing and dipping there is always emitted a large amount of phosphuretted fumes. He says that he is the only one that he has known to be affected with disease of the jaw in this establishment. His habits have been always steady, and his health perfect up to the winter of '57, when he began to suffer with a toothache in the right side of his lower jaw. This lasted for some time, and was followed soon by a hard lump upon the outside of the jaw. The pain continued to increase and the swelling to enlarge until an abscess formed in the submaxillary region, and burst, and discharged a large quantity of purulent matter. Being alarmed at the progress of the disease, he applied in February, 1857, at the College clinique for relief. The right side of his face was much swollen, and the right submaxillary region especially was occupied by a large abscess which was discharging pus very freely. Upon introducing a probe into the discharging orifice, I found that it led directly to the jaw, which was deprived of its periosteum and in a necrosed condition. There was, however, no indication that exfoliation had taken place from any part of the jaw, but, on the contrary, the whole bone was firm and solid.

At this time the disease seemed to extend only from the right lower canine tooth to the angle of the same side of the jaw.

He was put upon a tonic plan of treatment, and although he was exceedingly anxious to have the diseased part removed, he was advised to wait for the present, as it was hoped that exfoliation would take place, sooner or later, and he be saved the necessity of undergoing a severe and dangerous operation. He was advised also to leave off his occupation.

He made his appearance from time to time at the clinique, but with little change, except that the swelling seemed to be slowly extending. He still continued to pursue his dangerous avocation, on account of being unable to procure any other, and because a large family was depending upon him for support. For a few months nothing was seen of him. Again in September he presented himself in a condition much worse than before. Up to this time he had been obliged to continue his occupation, for the want of any other, but now, from weakness and exhaustion, he has been forced to give it up. All the teeth upon the right side of the jaw have loosened and fallen out. Besides several openings upon the outside of the face, that were freely discharging pus, there were two or three inside of the mouth, from which there issued a large quantity also, and which led directly to the diseased bone. The disease seemed now to involve the whole of the right side of the lower jaw, without there being made the least attempt, seemingly, by the periosteum to replace the dead bone with a new casing of osseous deposit such as usually forms in ordinary cases of necrosis. This, however, is a peculiar characteristic of the disease which is especially mentioned by Mr. Stanley in his excellent treatise upon Diseases of the Bones, and by other writers also. Nor was there any disposition to exfoliate or to form a sequestrum, but on the contrary the whole jaw was as firm and solid as at the time when it was first examined. His constitution had now become seriously affected—as he was much emaciated and weakened by the great drain of pus that was constantly poured forth from the diseased parts. Quinia, iron, and a good rich diet were ordered, so as to put him in a condition as favourable as possible for the operation of resection of the bone.

*Oct.* 14. His present condition is about the same as before. He is pale, thin, and has an anxious look. He says his appetite is tolerably good, but he cannot eat solid food. The right side of his face is very much swollen; there are several fistulous passages under the jaw. In the mouth can be felt and easily seen the denuded jaw for an extent of two inches. His breath smells very offensively. The disease now extends from the right temporo-maxillary articulation to the left lower canine tooth.

The patient being placed upon the operating table, and etherized, in the presence of the class, and with the kind assistance of my colleague, Prof. Gobrecht, and Drs. Hazzard, Bradley and Pittinos, I proceeded to remove the diseased portion of the jaw. Commencing with an incision opposite the left lower canine tooth, and at the base of the jaw, I carried it parallel with the base around the symphysis, to the angle of the right side, and met this with another incision extending downwards from the zygoma, half an inch in front of the tragus. The great tendency to free bleeding required the application of a large number of ligatures, although on account of their ready application, but little blood, comparatively, was lost. The incision was made down to the bone, which was found to be entirely deprived of its periosteum. But little difficulty was therefore encountered in raising the flaps, which required only a few touches of the knife to free the bone from its attachments. A space being now cleared at the junction of the left lower lateral incisor and canine tooth, a Hey's saw was used to make a groove, and the division was completed with Liston's straight bone forceps. On account of the extensive separation of the periosteum, it was found that the finger could be carried around the bone in its whole circumference, and to nearly the whole extent of the diseased portion. The attachments of the digastric, mylo-hyoid and genio muscles were all found to be loosened from the jaw, as also were the buccinator and the masseter muscles. The separated portion of the bone was now carried strongly outward for the purpose of further facilitating the operation of disarticulation, viz: the separation of the attachments of the pterygoid and the temporal muscles—for, on account of the great amount of swelling that existed in the ramus, and the pain that the patient suffered in this region, I felt convinced, previous to the undertaking of the operation, that it would be necessary to disarticulate; or, in other words, the disease had extended so far as to involve the whole of the side of the jaw; even the articulation itself was affected. This was evident from the great immobility of the joint, and the great pain that was caused by every attempt to produce motion in it.

Having then completed the division of the bone, I carried the divided end out strongly for the purpose above mentioned, when it broke loose from its attachments altogether—articular cartilage, ligaments, muscles and all—as cleanly and perfectly as a hickory-nut is turned out from its pericarp or outer shell. Thus, very unexpectedly, was completed the operation—the disarticulation having been accomplished spontaneously so far as division of the ligaments and the attachments of the condyle to the surrounding parts is concerned. The flaps were now brought together and retained by sutures and adhesive straps, water dressing applied, and the patient soon removed to his bed. At the end of four days the wound healed entirely by first intention, except at one point in the middle, where there was a considerable discharge of pus, which continued for five or six days longer, when it closed up completely. In two weeks from the time of operation, McK. was able to go out of the house, feeling perfectly well, except being weak, and with one of the best indications of returning health, a keen appetite.

The appearance of the diseased bone is as follows: Its general form is not altered; in size it is increased by a coating of osseous deposit, which is irregular in thickness, varying from one to three lines, in some places being much thicker than in others, with irregular eminences and depressions that cause it to be very rough and uneven. This deposit, except upon the coronoid process, the condyle, and the part near the line of division, has a dirty grayish appearance, and a porosity that much resembles the character and appearance of pumice-stone; besides, it has a harsh and roughened feel like that of sandpaper. Upon the coronoid process, condyle, and the front of the jaw at the symphysis, the deposit is much thicker—it being two lines or more in thickness, light in colour, smooth and more even, and has more the appearance of healthy bone. The coronoid process, instead of being one-eighth of an inch in thickness, or thereabouts, at its base, and tapering off to a thin point as in the healthy bone, is thickened in this specimen to the extent of nearly half an inch at its base, while its apex is more than half an inch broad, and is nearly as thick as at its base. The articulating surface of the condyle does not seem to be much affected, but the neck and the part which constitutes the sulcus between it and the coronoid process are increased to four times their usual thickness. From the line of separation of the diseased portion from the healthy, to the extent of three-fourths of an inch there is a similar deposit. The interior of the bone, as seen from the divided end, has the appearance of being perfectly healthy. In the middle of the body of the jaw where, it will be remembered, the disease first appeared, this deposit has disappeared for nearly the extent of an inch in breadth and depth and the jaw itself has this pumice-stone appearance similar to that of the deposit. As the distance from this part increases, the deposit thickens until we reach that upon both extremities, which has more nearly the appearance of healthy bone. In other words, this deposit is the thickest where the disease has existed the shortest time, while the point where the disease first began is entirely denuded.

These facts, it seems to me, will give us an insight into the pathology of this disease, which differs so entirely from the other forms of necrosis. In the latter, whenever there is thrown out an osseous deposit, it is separate and distinct from the dead bone, and is in no way connected with it, except to act as a substitute for it when the necrosed portion shall have been removed; while in this form, produced by the inhalation of the fumes of phosphorus, the deposit is made directly upon, and is firmly adherent to the dead bone. This results from the periosteum being first affected, and the bone dies only after the deposit has been made upon it, while in the other forms the deposit is secondary to the death of the bone.

The pathology I believe to be the following: Water absorbs the phosphuretted fumes, which have been ascertained to be hypophosphoric acid and phosphuretted hydrogen, and so does the saliva. A more convincing proof of this is the fact mentioned by a French writer, that the operatives in match factories sometimes belch up gases from their stomachs, which in the dark are luminous, showing them to be phosphorescent. There certainly can be no more rational way of accounting for this phenomenon, than that the gases are absorbed by the saliva, and are taken into the stomach by being swallowed with the saliva, which acts as a vehicle for them; here the higher temperature of the stomach causes these gases to be evolved again, which mix with the other gases, and with them are expelled the stomach by eructation. Then, again, it is a well known fact that those persons are only affected with necrosis who have carious teeth, and it is said that persons may work amid phosphorus for years with impunity, so far as necrosis is concerned, if their teeth be only kept in a sound condition. The saliva having absorbed a certain quantity of these gases, lodges into or comes in contact with the exposed pulp of the tooth. Thus the pulp in consequence becomes irritated and inflamed. The inflammation is communicated to the periosteum of the alveolus. Thence it spreads by continuity of texture to the periosteum of the body of the jaw.

The same effects are now produced that follow inflammation of the periosteum ordinarily, viz., an osseous deposit is thrown out. This inflammation proceeds on until the death of the periosteum takes place. Now the bone and its deposit being deprived of their support, take on the process of decay. Hence the formation of abscesses, exfoliation, etc., as shown so distinctly in this specimen.

The death of the periosteum I infer from the fact that all writers agree upon the statement that no bony casing is thrown out to act as a substitute for the dead bone, which takes place in all other forms of necrosis; and that in this case, the part of the deposit where the disease had recently appeared seems but just stripped of its periosteum, viz., the coronoid process, condyle, and from that part near the symphysis; while the intervening portion is more or less disintegrated, showing that nutrition had ceased, and that the part was left to the process of decay.

This disease is an exceedingly rare one in this country, and although it is much more common in England and on the Continent, yet but little attention has been paid to its thorough investigation. On this account I have endeavoured to describe this case as accurately as possible, that a better knowledge of its nature and pathology may be obtained.

## ART. XI.—*Case of Somnambulism.* By ROBERT M. STRIBLING, M. D., of Virginia.

A CASE of somnambulism (I so call it, in default of a better name) came under my notice about a year since, which presented some interesting and novel features; and with the hope that its publication may tend to throw light upon the physiology of the brain, but more particularly upon that condition of mental action known as mesmerism, I send it for insertion in the American Journal.

The subject of this affection was a man 32 years of age. He had spent the greater part of his life as clerk in a mercantile house, and during the spring of 1856, came to Markham Station, to live with a relative of his, who had established a store there. Here it was that he came under my notice. For many years he had been very dissipated, and had been treated several times for delirium tremens he told me.

During the course of the following fall, one of the young men who lived in the house with him, found that when suddenly awakened, he would commence to talk about his goods, imagining that he was making sales to a purchaser, and urging him to purchase some article. He found then, if he pretended to be a purchaser, Mr. A. would go on recommending his goods, would get out of bed, search for his yard stick, measure off any number of yards called for, whether it was of silk, cloth, or calico, from a newspaper. That if he represented one of the young ladies who usually made purchases at the store, Mr. A. would treat him with all the deference he usually bestowed upon ladies, never for an instant seeming to doubt that he was dressed and waiting upon the lady in the store, but would talk about, laugh at, and joke over his goods, as he was known to do while selling goods to ladies. When in this state, one after another the young men were brought up and introduced to him, sometimes as ladies, and sometimes as gentlemen; always after he would call them by the name by which they were introduced, and behave in all respects towards them as if they were the real personages represented. Sometimes one would represent a rowdy, and curse and swear; Mr. A. would immediately seize him and attempt to put him out; often the scuffle was very severe and long-continued, and during the scuffle some persons standing by would pinch and slap him, to which he seemed very sensitive, but was not at all aroused from the delusion by it.

Whilst in that state he knew no one, not even his employer, who was often present; indeed, until introduced to any one, he would pass him as he would a pillow or post, not seeming to be aware that he was a human being, but when once introduced, he never after forgot the imaginary person, but would recognize and talk to him whenever he met him. He would, when told to go to the books and make off a long account, put on his overcoat and spurs, though he was in night-clothes and had on neither socks nor shoes, and start out of the room on a collecting expedition. When brought back and told the gentleman he sought was in the room, he would, in his usual bland manner, present the account and request payment, urging him after his custom to do so. He was once captain of a militia company, and if at any time one of the company struck up a march, he would hasten to put on his drill-coat, sash, and sword, though his legs and feet were bare, and commence to arrange those present in a line to go through a regular drill. In fine, tell him he was at a ball, he would immediately think he was there, and would act accordingly; so if you told him he was in Baltimore, Philadelphia, or New York. He could not be made to lose sight *of his own identity*, but upon everything else, his mind seemed to act upon any suggestion, no matter by whom made.

So long as he was acting under a delusion it was impossible to awaken him; numerous attempts were made by myself and others, but we could by no effort used succeed in the slightest degree, but if left alone for a few minutes he would return to his bed and close his eyes in sound sleep; then if aroused in a natural manner, he would awake perfectly rational, and without the slightest consciousness of what had just passed. Usually in the morning after he had been experimented upon, he would awake complaining a good deal of soreness and lassitude, but had not the slightest idea of its cause. At last his employer, at his urgent request, forbade any repetition of the experiment; all saw, too, that his health was growing more precarious, and abandoned it, for fear of doing him injury.

A short time after, his employer told me, while standing conversing with him on business, he suddenly commenced praising his goods and trying to sell to him, evidently falling into that state of somnambulism whilst awake, and mistaking him for a customer. It required a considerable effort, he said, to arouse him.

During the time we were experimenting upon him, he was drinking a good deal, but I never saw him intoxicated, and he attended to his business with great regularity. Soon after, however, he commenced to drink more, and his stomach becoming irritable, an attack of delirium tremens supervened. Opium, morphia, brandy, and the nervous stimulants were used, but to no avail; he sank daily, though the irritability of the stomach had been subdued, and he could retain whatever medicine was administered. He would lay in bed all day and night, imagining he was selling goods to some one, handing a dun to some one, or engaged in his usual avocations, but when spoken to he would answer any question rationally about his feelings or condition. He remained in this state for a week or ten days, gradually sinking during the whole time, until the night before Christmas, when I was sent for in haste to see him, the messenger at the same time telling me that he was dying. I hastened to him and found all pulse had left the wrist, his extremities cold, and his face wearing the Hippocratic expression. The only signs of life were gasps at short intervals, but they more resembled spasm of the diaphragm than any combined effort of the muscles to effect respiration. He was pronounced dying, and all sat awaiting the result, when from the much prolonged intervals between his gasps, I supposed the next would certainly be his last, he suddenly sprang into the middle of the floor, and it required the combined exertions of three of us to replace him in bed; then, upon feeling his wrist, pulse was very perceptible in it and seemed to increase in force. Some brandy was given, which he swallowed with but little difficulty, and that seemed to revive him still more. Soon after, he sank into the same state again. Again, when expecting death, he sprang up as before. He continued in this state for about a week, when on the morning before new year's he suddenly expired.

No post-mortem was made, circumstances prevented, but so far as the symptoms went they gave no evidence of any serious organic lesion of any of the viscera. The prominent symptoms in the case were great prostration, accompanied with delirium, but the delirium was never violent, and he never became comatose; on the contrary, up to Christmas eve, there was no time when he would not answer rationally any question put to him. He seemed to die from complete exhaustion of the nervous force, which for the week preceding his death seemed to be flickering like a candle that had burnt out.

Such was the history of the case, as far as I thought it important to note it down. His somnambulistic exhibitions and illness were witnessed by numbers of gentlemen and several physicians besides myself, attracted some from interest in the patient, and some from curiosity.

## ART. XII.—*Exsection of the Entire Radius.* By J. M. CARNOCHAN, Professor of Surgery in the New York Medical College, Surgeon-in-Chief to the State Hospital (New York), etc. (With a wood-cut.)

THE following case of the exsection of the entire radius is without precedent in the annals of surgery, and having already, in 1854, exsected, for the first time, the entire ulna, I am justified in claiming priority for my exsections of the long bones of the arm in their contiguities.

Surgical compilations have heretofore given credit to Butts, of Virginia, for the operation of exsecting the entire radius, but it appears that the operation actually performed by that surgeon, was not on the radius, but on the ulna; of which only the lower two-thirds were removed. (*Philadelphia Journal of the Medical and Physical Sciences*, vol. x. p. 115, 1825.)

As regards the ulna, a case of the "entire removal" of that bone, and "all but a portion of the end of the radius," is attributed by Prof. Blackman (*Mott and Blackman's Velpeau*, vol. ii. p. 460, New York, 1856) to Dr. Compton, of New Orleans. On looking, however, at the report as transcribed, several valid and insurmountable objections present themselves to the reception of the case as one of exsection. The operation is said to have been performed by Dr. Compton, but is reported by a "Medical Student," in a very confused and contradictory style. As reported, the case was one of compound comminuted fracture of the radius and ulna, wherein, "the arm was in a sloughing state, and both radius and ulna were actually shattered to pieces, and protruding several inches out of the mass of muscles." The bones are described as having been disarticulated at the elbow, and yet the arm is said to have remained at a right angle to the humerus, and still further, "that it could be flexed and extended." (*Id.*, p. 460.) The utility of an exsection consists in the preservation of function, by avoiding amputation, and it seems to be a physiological impossibility, that after the removal of the shattered fragments of both bones of the forearm—with destroyed vitality—the function of the muscles of the forearm should be preserved. Besides, although it might be conceded that in a case of chronic necrosis of long standing, new bone might be thrown out, to take the place of the original, yet such an occurrence cannot be admitted as possible in a case of traumatic necrosis, resulting immediately from a severy injury.

*Case.*—Daniel Kane, aged twenty, a native of Ireland, a labourer, strumous aspect, tall stature, free from syphilitic taint, received an injury by a severe blow upon the upper part of the forearm. This was followed be severe inflammatory action of the whole of the forearm, as well as of the upper arm, nearly as high as the axilla. The pain was excessive, deep-seated—depriving the patient of sleep and appetite—and accompanied by high constitutional fever. Anodyne applications, such as medicated fomentations and cataplasms, with suitable internal remedies, had been used under medical advice in the city. Punctures along the swelling had also been made. This treatment had been continued for about three months, without much relief from the pain or diminution of the extent or the hardness of the swelling along the forearm, when he entered, as a patient, the surgical department of the State Emigrants' Hospital, on the 15th of November, 1853.

At the time of his admission, his countenance bore the evidences of severe and prolonged suffering. He was emaciated, feeble, and labouring under irritative fever. The hand, forearm, and lower half of the upper arm, were much tumefied and discoloured. The tissues of the forearm were hard, dense, and unyielding. The arm was much increased in circumference.

The pain still continued with unabated severity. A cataplasm, medicated with infusion of poppy-heads, was ordered over the swollen parts. Internally, quinine, porter, good diet, and a quarter of a grain of muriat. morph. at bedtime, were prescribed.

The elbow-joint now became immovable; and towards the inner aspect of the joint a slight fluctuation could be perceived.

A bistoury was passed into the abscess, down to the bone, and a small quantity of pus was discharged. About two days after this, another abscess formed upon the inner side of the forearm; this was opened in the same manner, and a considerable quantity of pus was discharged. About the 8th of December, matter was perceived near the wrist, on the dorsal aspect of the arm; this also was evacuated. From these different openings pus continued to be discharged in considerable quantities; the arm became somewhat less tumefied; the pain ceased to be so severe; the febrile condition subsided; and the general health showed signs of amelioration. Along with the pus small pieces of diseased bone were discharged, and the probe could be passed easily along the fistulous sinuses into the interior of the radius. These sinuses were of considerable length, running through the tissues of the arm to the extent of several inches, and opening at a distance from the cavities or abscesses in the interior of the bone. From December, 1853, to March, 1854, the fistulous openings continued to discharge considerable quantities of matter; the patient, in the mean time, being kept under tonics and nourishing regimen. From March till the following October, the condition of the patient remained much the same; at intervals, small pieces of dead bone continued to be discharged along with the pus. The patient's health did not improve, and the arm remained discoloured, swollen, indurated, and useless. It now became evident that the disease was one which could not be cured or ameliorated by medical therapeutics. The disease was evidently, from the first, an ostitis, followed by its most aggravated consequences—enlargement, caries, abscess of the bone, &c.

From the general tumefaction of the forearm, it was difficult to decide positively as to the extent of the ostitis; whether both bones were involved, or whether it was exclusively confined to one. The sinuses led to the radius alone, and the inference from this fact was, that the disease was confined to that bone. Supposing this to be the case, the question arose as to the propriety of amputating the arm above the elbow, or of exsecting the radius in its contiguities. The success which had followed the exsection of the entire ulna, as reported by me, induced me to select the latter alternative; and, accordingly, I performed the operation on the 31st of October, 1854.

*Operation.*—The patient was brought into the amphitheatre, and placed supine upon the operating table. Assistants were arranged so as to maintain firmly the trunk and lower extremities; others were placed to be in readiness to hand the instruments, and sponge the wound; chloroform was cautiously administered. The humero-cubital articulation, during the progress of the disease, had become immovable, and the forearm remained flexed at an obtuse angle with the humerus. One assistant held and supported the upper arm of the diseased limb, compressing, at the same time, the humeral artery. Another supported the hand and forearm, and maintained the latter in such position as to expose conveniently the radial aspect. An incision was now made with a strong scalpel, in the direction of the axis of the radius, commencing at a point immediately below the external condyle of the humerus, and extending downwards to a point opposite, and a little behind, the styloid process of the radius; next, two other incisions were made at the extremities of the first one, extending transversely backwards, about three-quarters of an inch. These incisions extended through the integuments, and subcutaneous adipo-cellular tissue and fascia, which were thickened and indurated. The middle third of the radius was now easily reached, and made bare on its outer aspect, by dividing the intermuscular tissue, behind the extensor carpi radialis brevior.

The tissues were then separated, at this place, from the posterior aspect of the bone; the edge of the knife being kept close upon the bone. The knife was now carried along the corresponding anterior surface of the bone, using at times the handle, and dividing the fibres of the supinator radii brevis, so as to lay bare the anterior surface of the bone, as far as the attachment of the interosseous ligament, along its cubital border. The outer surface of the radius was further laid bare, by carrying the dissection upwards, between the extensor carpi radialis brevior, and the extensor communis digitorum. The muscular tissue, surrounding the radius at its upper part, was then detached from the different aspects of the bone, as far as the insertion of the interosseous ligament. Attention was now directed to the lower part of the radius; and here the necessity of preserving the different tendons, passing over the posterior part of the radius to the hand, required the greatest caution. The knife was carried behind the fleshy mass, composing the origins of the extensor ossis metacarpi pollicis, and the extensores primi et secundi internodii pollicis, detaching it from the radius, and the posterior part of the interosseous ligament. The tendons of these muscles were next insulated, and carefully dissected from their attachments, and from the groove beside the styloid process of the radius, along which they pass. The tendons of the extensor carpi radialis longior and brevior were now insulated, and detached from the groove along which they pass. The tendon of the extensor indicis was next detached. The extensor communis digitorum, with its tendons, and the extensor minimi digiti were also liberated, and dissected from their respective grooves on the lower part of the bone; and the knife was then made to separate the supinator radii longus from its attachment.

At this stage of the dissection, it was deemed expedient to divide the bone at its central part, in order to facilitate the detachment of its articular extremities. An attempt was made to pass a large curved needle, for the purpose of introducing the chain-saw through the interosseous space; but this was found impossible, owing to the increased diameter of the radius, and its consequent approximation to the ulna. The various soft parts were now held apart from the bone, and protected by means of compresses; the bone was then nicked, and divided by a metacarpal saw through three-fourths of its diameter, the rest of the osseous section being completed by smart blows of the hammer on a chisel. The dissection was now continued, so as to remove the upper fragment, which was found to be immovable at the articulation with the humerus. The upper fragment was held by the forefinger and thumb of the left hand, and a blunt-pointed knife, curved flatwise, was slipped under the bone, so as to separate the interosseous ligament from its attachment. This ligament was next carefully detached upwards, as far as the insertion of the tendon of the biceps muscle. The knife was then carried upon the outer portion of the annular ligament, and this, with the external lateral ligament, was divided. It was now perceived that bony union had taken place between the inner half of the upper surface of the head of the radius, and the lower part of the humerus; with a small chisel this union was easily destroyed. It now remained to detach the insertion of the biceps muscle, which was somewhat difficult, because the increased size of the bone made it encroach upon the track of the artery.

Keeping the edge of the knife close upon the tubercle of the radius, the detachment was effected. It next remained to detach the lower fragment. By means of the blunt-curved knife, the interosseous ligament, and the pronator radii quadratus were detached from the bone. The different tendons running over the outer side of the radio-carpal articulation were now held aside by blunt hooks, and the radial artery was felt for, and also held aside. The bistoury was then carefully passed along, and under the styloid process, so as to divide the lateral ligament, and open the joint at the external part. The other tendons crossing the posterior aspect of the joint were also pulled to one side, so as to admit of the division of the posterior radio-carpal ligament. The articulation of the lower part of the ulna with the radius, was now opened upon its posterior aspect. The bone was next elevated and rotated, so as to permit the entrance of the knife at the external part of the joint, and the anterior radio-carpal ligament was divided. A few touches with the point of the bistoury completed the exsection.

The pressure on the artery was now removed, and the wound cleansed of blood. The hemorrhage, which was chiefly venous, became trifling. It was necessary to secure only the interosseous artery, and two small muscular branches.

During the operation, the radial, ulnar, and brachial arteries, escaped injury, as did also the median and radial nerves. The various tendons which have already been mentioned, were also insulated, and separated from their attachments, without in any case being divided.

*Progress of Union.*—After the oozing of blood had ceased, the different tendons were placed, as nearly as possible, *in sitû*, and the edges of the wound were maintained together by points of interrupted suture: strips of adhesive plaster, a layer of perforated lint spread with balsam Peru cerate, scraped lint, compresses, with a retentive bandage, formed the dressing. The forearm and the hand, in a state of pronation, were then laid upon a well-padded splint, and secured in that position by means of a circular bandage.

At night, after the operation, an anodyne draught was given. Next day, November 1st, slight constitutional fever; pulse rose to 105. Patient restless, and suffering considerable pain; ordered an anodyne at bedtime.

*Nov.* 2. Had slept better, pain less severe, pulse 100. First dressings removed in the afternoon. Union of the lower portion of the wound by first intention for about two inches above the wrist. An anodyne at bedtime.

3*d.* Traumatic fever subsiding; wound dressed; suppuration profuse. Some sutures were removed; ordered sulph. quiniæ, two grains every two hours; muriat. morphia at bedtime.

During the following three weeks, with but little modification of the treatment, the patient continued to improve: the suppuration became less; the process of healing advanced favourably; and the lips of the wound were nearly united in its whole length. There remained two sinuses leading into the tissues of the arm; one opening near the elbow joint, another about the middle of the forearm.

22*d.* Iodide of potassium and cod-liver oil were substituted for the quinine.

During the following four weeks, the patient's general condition went on improving; he gained flesh; his countenance assumed the aspect of health; exercise in the hospital grounds allowed; the arm being kept in a sling.

1855. *January* 2. The sinuses had entirely healed, and the whole line of the wound cicatrized. The limb was still carefully and lightly bandaged, and the splint used, in order to give support to the hand, while the tissues along the radial aspect of the forearm were gaining solidity.

10*th.* Removed the splint, substituting the simple bandage. The patient allowed to use his hand and arm; general health restored.

Eleven weeks after the operation the patient was discharged cured.

*Functions of the Arm, and its Appearance.*—The patient returned afterwards, and was again admitted into the hospital for an internal malady, from which he soon recovered. He had regained, however, the use of his hand

and arm so much, that he was enabled to perform the duties of orderly in one of the surgical wards.

The radial aspect of the forearm presents the long cicatrix of the wound, and a depression exists along the original site of the radius. From the rigidity of the elbow joint, the forearm remains flexed at a convenient angle with the upper arm. The deformity of the limb is not so great as might be supposed would occur from the removal of the chief support to the hand.

The axis of the hand is not exactly in its normal direction, the hand being drawn slightly towards the radial side of the arm; and the styloid process of the ulna, from this circumstance, seems to project more than is natural. The functions of the hand are entirely preserved; as a matter of course, the power is not so great as it was, but, with this exception, prehension is unimpaired. He can carry a bucket full of water without difficulty, and can also write with ease.

The functions of the fingers are not diminished, and the sense of touch is as good as it was before the operation. The rigidity at the elbow joint is the result of the antecedent disease, and not of inflammatory action following the exsection. The functions of the wrist-joint, where the most trouble was to be anticipated, is but little interfered with. Flexion and extension are performed without difficulty; the hand can be turned prone or supine, and can also be adducted and abducted. The large arteries and nerves of the forearm were not injured during the exsection; and the muscular tissue, with the exception of those portions which had to be detached from the surface of the radius itself, was left intact by the knife. The various muscles which passed over the posterior and inferior part of the radius now, serve to effect extension of the wrist and of the fingers; such as the extensores carpi radialis, the extensor communis digitorum, the extensor minimi digiti, and the extensor carpi ulnaris.

In the new position which the hand has assumed, the extensores carpi radialis, with the extensor ossis metacarpi pollicis, and the extensor primi et secundi internodii pollicis, with the extensor indicis, aid in effecting abduction.

Adduction is effected by the extensor carpi ulnaris and the flexor carpi ulnaris; while flexion is performed by the flexor carpi radialis, the palmaris longus, the flexor carpi ulnaris, the flexor sublimis, the flexor profundus, and the flexor longus pollicis.

*Pathological Condition of the Bone.*—The diseased radius is represented by the accompanying wood-cut. Fig. 1 represents the posterior aspect of the upper half. Fig. 2, the lower or carpal half—the posterior surface.

The entire bone presents the characteristic appearances which result from prolonged and severe inflammation of the osseous tissue; the bone is expanded or enlarged in its whole extent; the measurement around, a little below the middle, is 4¾ inches, and the weight is seven and a half ounces; the weight of a healthy radius, recently removed, being only from two ounces and one drachm to two ounces and two drachms.

Fig. 1.

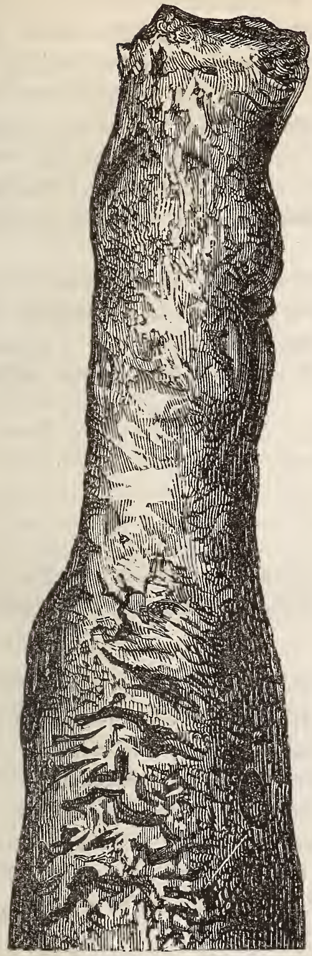
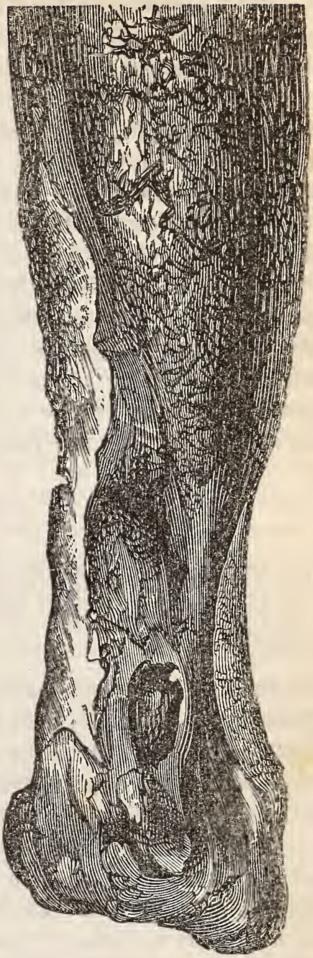


Fig. 2.



The upper third of the bone, when examined soon after its removal, presented on its anterior aspect the following appearances: the periosteum was partially loosened from its attachments and thickened, resembling softened cartilage rather than fibrous membrane. Numerous foramina were seen—enlarged, well defined, and hemmed round by mammillated eminences. The general surface of this portion, anteriorly, was rendered very irregular by the addition of new osseous matter, thrown out by the periosteum, and forming sulci, crests, and bridges of bone. The posterior aspect of the upper third was not so much altered; its surface, however, was rough and irregular.

The middle third was enlarged to a greater extent than any other part of the bone; being about five inches in circumference. It presented a surface more uniformly irregular than the upper third. The periosteum was mainly adherent, and but little thickened. Beneath it the bone was found everywhere honey-combed by large foramina; the osseous matter around each foramen blending with that around the others in its neighbourhood, and giving rise to minute fissures and irregularities, running in every direction.

At different points cloacæ opened on the surface, and communicated with a central cylindrical canal, containing an undetached and spongy sequestrum. This canal was filled with pus, and formed an abscess in the interior of the bone. The section of this part of the bone and the surface show that new bone was being deposited from the periosteum and its processes, and that absorption was going on internally.

The lower third presented fewer marks of disease. It was, however, considerably enlarged; several enlarged foramina were seen on the anterior surface; while, on the posterior surface, a cloaca, extending into a purulent cavity, in the interior of the bone, and some irregularities on the surface, constituted the changes to be noted.

45 LA FAYETTE PLACE, NEW YORK, *March* 1858.

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## ART. XIII.—*Account of a Monster of the Genus Peracephalus.* By WALTER F. ATLEE, M. D. (Read before the Biological Society of Philadelphia, March 1, 1858.)

THIS monster was the product of a double gestation, the mother being delivered at seven months. The child born first lived fifty-five hours; it was a female, and perfect with the exception of one club-foot; this monster came away about twenty minutes afterwards. One placenta was common to both. The mother was a healthy woman who had previously borne three children, in as many confinements. In the first two pregnancies the child was female, and born at seven months; in the third the child was male, and born at eight months and a half. The woman had received, so far as is known, no fall or fright in the course of her pregnancy.

The monster has no head or upper extremities. The trunk and lower extremities are of a size corresponding to those of a well-formed fœtus of seven months. A want of perfect symmetry, however, is very manifest, in the two halves of the trunk, which is remarkable for a number of elevations, with depressions between them. These elevations are due to the accumulation of a great quantity of cellular tissue. This sort of lumpy condition exists likewise in the lower limbs, which present, in addition, several other imperfections. The feet are turned inwards, and they possess but four toes, two of which, the smallest, on one foot, are not separated. The external organs of generation are those of the female; the anus exists.

Upon the front of the trunk, between the umbilicus and its upper extremity, is something having the appearance of a small empty bag or bladder, attached by a rather narrow pedicle. Both above and below this bag is a small tuft of hair. Towards the sides of the thorax, in the places usually occupied by the nipples, are small round orifices.

For the sake of preserving the original appearance of this monster, which was deposited in the collection of the Biological Society of this city, the examination made of its internal structure was very limited; it was confined, in fact, to an examination of the spinal column. The sacrum was found to have its concavity looking backwards; the lumbar vertebræ are five in number, and the dorsal twelve; at the commencement of the cervical region the spine is bent forwards and downwards, and it leads, by a chain of small rudimentary bones, imperfectly formed but evident rudiments of vertebræ and a cranium, to the empty bag, mentioned as existing on the front of the thorax. The existence of a few hairs in this place, rudiments of the hairy scalp, had already foretold, what a slight dissertion has sufficed to prove, as to the termination of the vertebral column.

According to the usually adopted classification of Geoffroy St. Hilaire, in his *Traité de Teratologie,* this monster is one of the genus *peracephalus,* the Greek *περα, beyond* or *further than,* being prefixed to acephalus, to mark a still greater deformity, the thoracic members being absent as well as the head.

St. Hilaire states that about fifty cases of this form of monstrosity have been recorded, and that from their examination it appears that, generally—they are not born of women in labor for the first time; delivery takes place from the sixth to the eighth month; the gestation is double; the placenta is common to both the children; the other child is well-formed, the sex is the same; and the acephalic child is almost never born first. All these circumstances, said by St. Hilaire to generally occur, have been noticed in this instance as already stated; the only exception being that the first child had a club-foot, instead of being well-formed.

It is interesting to notice that, in animals, the only examples of this monstrosity have been in the sheep and the deer, ruminants both of them, and like man, generally uniparous. In all these examples—they are four in number—gestation was double.

As, for the sake of preserving the specimen, the dissection of this monster was not carried far, the principal modifications of the internal organization, found in these cases, will be given as they are stated by St. Hilaire. As in every other point his statements correspond to what occurred and was found in this case, there is no reason to doubt that they would also correspond to what would be found were the dissection completed.

The diaphragm is wanting, or, at most, the separation of the thorax from the abdomen is membranous. It will be recollected that a muscular separation of the thorax from the abdomen is only observed in mammiferous animals.

In the thorax the lungs are absent, or are in a completely rudimentary condition. Even their presence as rudimentary is very doubtful.

The heart is most usually absent. It has been said to be constantly absent, but it is possible to prove the existence of an imperfect heart in some cases of acephalous children. This question of the existence of a heart is very interesting, for, according to Aristotle, who has reigned over science almost to the present day, it is the organ first formed.

What is true of the heart is true also of the liver, the spleen, and the pancreas. Their absence is the usual, their existence the exceptional case.

The alimentary canal constantly exists, but incomplete, and offering evident traces of imperfect development. The large intestine is always found; there is often, though not always, a considerable portion of small intestine; a small stomach is sometimes found, and even, in one case, the inferior extremity of the œsophagus.

The urinary organs, after the intestinal canal, are the most constant parts. The organs of generation are as constant as those of urination, but they are very often imperfect, or even rudimentary.

The skeleton is always very incomplete, as are also the nervous, the muscular, and the vascular systems.

It will be noticed that the order in which the different organs of acephali disappear is almost exactly the order in which, in the series of normal beings, the organization is seen to be simplified, and to be successively degraded. Thus, in animals, the heart and the lungs disappear before the stomach, and this in its turn disappears before the genital organs, and above all, before the intestine, which is the most constant of all organs. Should this coincidence, between the degradation of the organism in the animal series, and the disappearance of so many organs in the acephali, be considered as only fortuitous, or does it depend upon necessary causes? Almost all departures from the normal condition can be explained by *arrests of development,* for they realize the normal conditions of the first ages of the life of the embryo. Now the primitive conditions of the organization of the embryo, are also the conditions of the organization of beings of the inferior degrees of the animal scale. Hence the very natural explanation of this remarkable similarity existing between the modifications of acephali and those in the inferior classes of animals.

From the fact that the transitory or embryonic condition of a superior animal resembles, in a more or less striking manner, the permanent condition of another animal less elevated in the series, some authors have thought that every superior animal, before reaching its definite form, passes through the series of forms proper to the animals that are inferior to him, and that the diversity of species results from a series of *arrests,* effected at different degrees of the embryonic evolution. Serres (*Précis d'Anat. Transcendante Appliquée à la Physiologie,* Paris, 1842) lays it down as a principle that "human organogeny is a transitory comparative anatomy, as in its turn comparative anatomy is the fixed and permanent condition of the organogeny of man." This we do not believe to be true; every animal bears in itself, from its origin, the principle of its specific individuality, and the development of its organism, conformably to the general tracing of the plan of structure proper to its species, is always for it a condition of existence. The term arrest of development, is not meant to express an embryonic condition, permanent for some animals, transitory for others, but a form which has remained quite similar to that which the embryos of these animals, and of others derived from the same fundamental type, possess at a certain period of their existence.

What Milne Edwards calls the "economy of means," by which the rich diversity of products, to be found in the animal creation, has been brought about, is most wonderful. One of the most powerful causes of this rich diversity, is the inequality in the degree of perfection reached by animals. All animals are equally perfect in their kind, as Cuvier says: they are perfectly fitted for the part they are to play, but this part is far from having always the same extent and importance.

It is only in the past few years that the true point of view under which the physiological study of monstrosities should be embraced has been rightly understood. All the facts and all the laws of teratology are only the consequences of embryonic laws and facts; and embryogeny, as the science is now understood, was only begun some fifty years ago. Embryogeny has for its fundamental basis, this principle, that the organs do not exist entirely formed, from the beginning, but, on the contrary, are formed at epochs, that vary for each of them. Necessarily very small and very simple when first formed, these organs increase in size and undergo developments.

Universally, until the 17th century, all monsters were destroyed. It was held to be a bold novelty when Riolan, one of the most distinguished men of his time, declared that six-fingered children might be allowed to live. Riolan taught, moreover, that monsters, half man and half animals, should rather be killed; as to monsters, made in the likeness of the devil, if allowed to live, they must be constantly shut up and kept concealed.[1] From the superstitions of that time, in the course of a century and a half, the science of monstrosities has risen to the highest considerations of natural philosophy.

## Art. XIV.—*Spontaneous Rupture of the Eye.* By Andrew Fleming, M. D., late Resident Physician to the Pennsylvania Hospital.

Reuben Pond, aged 50, seaman, a native of New Jersey, was admitted into the Pennsylvania Hospital Sept. 22, 1856.

Two years ago he had some disease of his right eye, which lasted for a month, when he lost the use of it entirely. Since that time it gave him no trouble or uneasiness until two days before his accident, when he suffered from a severe, acute and throbbing pain in it, but without increase of size.

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[1] Riolan was Dean of the Faculty of Medicine, in Paris; he died in 1605.

He has been temperate, has, with the exception of the above, always been in good health, and has received no injury which could have caused his present condition. He had been engaged, during the day, in loading a sloop with manure; which service required him to stoop a great deal, had quitted his work, and while standing on the wharf conversing with a comrade, he suddenly felt a pain as of a knife cutting across his eye, when a gush of blood started from the sightless globe.

On admission he was tossing about in great agony, perfectly sensible, with a weak, rapid pulse and cold skin. On the outside of the lids was a clot, about the size of the eye, resting upon the cheek. When this was removed, a rent was found extending clear across the cornea and a copious and steady stream of arterial blood welling up through it. After cleansing the laceration carefully, no protrusion of the iris or crystalline lens could be perceived, and a probe introduced gave no indication of the presence of the latter. The eyeball was of the same size as the opposite one, and with the conjunctiva and lids presented a healthy appearance. The examination caused such exquisite pain, that a more minute inspection would have been injurious, and the presence of the blood behind the torn cornea rendered it difficult to recognize any alteration in the tissue. It is to be regretted, as in many cases of interest, that the knowledge of the antecedents had to be obtained from the patient alone.

A full anodyne was immediately given, and a piece of lint, dipped in tinct. ferri chlor., inserted in the eyeball through the opening, and retained by an adhesive strip. He was then put to bed, sol. morph. s. given in sufficient doses to quiet him, and, when reaction had been fully established, cold was applied.

*Sept.* 23. No hemorrhage has taken place since the introduction of the lint; there is some swelling of the face and œdema of the eyelids; he has slept a little and feels much better.

The case now progressed favourably; suppuration took place, followed by healthy granulation, the wound in the cornea healed, the eyeball was slightly diminished in size, and he was discharged cured Oct. 31, 1856.

The cases are numerous and the circumstances very varied where spontaneous effusion of blood, without rupture of the cornea, takes place in the eyeball, while those in which hemorrhage, with rupture of the cornea, does take place or would be likely to do so, are confined to malignant disease of the orbit, glaucoma (Mackenzie, *Practical Treatise*, and Desmarres, *Mal. des Yeux*), and aneurism. There being no reason, from the healthy appearance of the eye, and the absence of the lens, for supposing the existence of the first two, I shall dismiss them.

Aneurism is here found, as in other parts of the body, of two kinds.

Traumatic aneurism of the ophthalmic artery is a very rare disease, and so far as my inquiry goes, but three cases have been reported. Two of these are reported in the *Med. Chir. Transactions*, vol. xxii., by Geo. Busk, Esq., one occurring in his and the other in the practice of Mr. Scott, surgeon to

London Hospital. The third is that of Mr. T. B. Curling in (*op. cit.*) vol. xxxvii. A very remarkable case of anastomotic aneurism of the orbit, resulting from injury, was treated by M. Velpeau, at la Charité (*Mal. des Yeux de* Mackenzie, *trad. avec notes par* S. Laugier et G. Richelot). In the above cases the injuries received were of a violent kind, and followed by great enlargement of the eye with protrusion, and all the characteristics of aneurism. In each case the common carotid was ligated, and, with the exception of the last in which the life was saved, were successful, not only regarding the condition of the patient, but in restoring the use of the eye.

Of spontaneous aneurism, the number of cases is greater, and I shall enumerate but a portion collected. Mr. Guthrie (*Lec. on Oper. Surgery*) has given a description of a true aneurism of this class, of both ophthalmic arteries as verified by *post-mortem* examination. Others, whether of true or anastomotic character, have been given by the following authors, viz., Mr. Travers (*Med. Chir. Trans.*, vol. ii.), Mr. Dalrymple (*op. cit.*, vol. vi.), M. Jobert (*Mém. de l'Acad. Roy. de Médecine*, tome ix.), Mr. H. Haynes Walton (*Lancet*, 1852, vol. i.), M. Petrequin (*Comp. Rend. de l'Acad. des Sciences*, tome xxi.), and M. Bourguet (*Archives Générales*, 1856). Of these cases, in the first four the common carotid was ligated, and a perfect cure (with sight restored) effected; in the fifth, the common carotid was tied, but the pulsation soon returned, and one month after the galvano-puncturation was tried but without success—the patient died in a short time, and the last was cured by injection of perchloride of iron.

In all cases of aneurism of the orbit, whether of a traumatic or spontaneous character, there is considerable time required for the development of the disease, and there is no case in which, besides the symptoms peculiar to aneurism, there is not great enlargement and protrusion of the eye. From this, it would appear that the case of which I have given the details was not one of aneurism.

To explain the pathology of this lesion, it is necessary to suppose a varicose condition of the vessels within the eye, increased by the occupation at the time (Beer and Walton), with perhaps disease of their coats as described by Ignaz Meyr (*Canstatt's Jahresbericht*, 1851), and at the same time a ramollissement of the cornea (Mirault, Rosas and Stoeber) which offered no resistance to the tendency of the vessels to rupture.

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## Art. XV.—*Experiments with Bibron's Antidote to the Poison of the Rattlesnake.* By Louis de Vesey, Member of the Academy of Natural Sciences of Philadelphia.

In the January number of the *American Journal of the Medical Sciences*, Dr. William A. Hammond, U. S. Army, gives the details of several cases of infection from rattlesnake poison in which Bibron's antidote was employed. The nature of the antidote and its history are given, and need not therefore be dwelt upon here.

The present paper, containing also the results of cases of poisoning from rattlesnake bite, in which this remedy was used, is contributed with the hope that a knowledge of its influence in obviating the ill effects which so generally follow the wounds made by this venomous reptile may be more extensively known throughout the country.

Whilst at Contra Costa, on my way to Fort Tejon, in California, a young boy was bitten by a rattlesnake. In a short time the wounded limb (the leg) was much swollen, and there was a good deal of pain in the part; his parents, refusing my services, sent for a physician. His remedies, however, were unavailing; the boy was completely prostrated, and the bitten limb and even the body were much swollen. The next morning, all hopes of recovery having been abandoned, I was requested to prescribe for him. I immediately gave him ten drops of the bromine mixture, diluted with a little alcohol and water, and four hours afterwards repeated the dose. Very soon after the first dose amendment commenced, and progressed rapidly after the second dose. Towards evening all swelling, pain, &c., had disappeared, and the next morning the boy was as well as if nothing had happened.

In the vicinity of this fort rattlesnakes are found of very large size, and desirous of further testing the powers of the antidote, I procured three dogs and subjected them to a series of experiments with it after causing them to be bitten by the snakes.

The first dog (a small but powerful animal) was bitten twice, in a very short period, in the throat; the characteristic symptoms which usually follow infection of this kind soon supervened. I gave him ten drops of the mixture, and he almost immediately began to improve. The next morning he was well, but the swelling did not entirely disappear for two days.

The other two dogs yielded similar results, one dose of the antidote was always sufficient, except with the *crotalus lucifer*, which inflicted wounds of more than ordinary severity. Two or three doses, and even some alcohol, were generally necessary in bites from this species.

In all, I performed seventeen experiments on the three dogs, with seventeen different serpents, and invariably with a successful result. In the course of the investigations I found that dogs which had taken several doses of the bromine mixture, were for some time afterwards incapable of being infected by the poison of the rattlesnake.

I am sure experience will demonstrate the bromine mixture to be an effectual antidote to wounds from the rattlesnake—the most poisonous member of our fauna.

FORT TEJON, CALIFORNIA.

# TRANSACTIONS OF SOCIETIES.

## Art. XVI.—*Summary of the Transactions of the College of Physicians of Philadelphia.*

1857, *Aug.* 5. *Injurious Effect upon the Eye of the Light from the Fish-tail Burner.*—Dr. Rand desired to call the attention of the Fellows to the injurious effect upon the eye of the unsteady light produced by a common form of gas burner.

The burner alluded to is known as the "fish-tail, or union jet," and is almost the only one now introduced by the gas-fitters. The gas issues at its tip in two opposing currents, which impinging nearly at right angles, cause the gas to spread in a sheet of flame, the plane of which is at right angles to that joining the orifices of the jets. When the pressure is increased beyond a certain point, the flame rises in an irregular column, accompanied by a hissing or humming noise; this is termed "blowing."

It must be manifest from an inspection of the structure of the burner, that the least inequality in the amount of flow through the two tubes leading to the jets will produce an unsteadiness of flame, and this unequal flow will be most marked when the pressure is below the maximum for light, without amounting to that sufficient to produce "blowing." To avoid this blowing, the gas is generally kept turned down, below this maximum point, and it is very rare to see a steady light from one of these burners.

The effect of this flickering is very annoying to one unused to it, causing pain in the eyeball, confusion of vision, headache, and other symptoms of fatigue of the optic nerve. In many cases the eye, after a time, becomes accustomed to it, but at its own cost; in others this tolerance does not occur, and Dr. Rand was acquainted with several persons who could never employ this light, but used candles or the Argand burner when reading or writing.

The almost universal adoption of the "fish-tail" burner was due to its convenience and great relative economy, giving as it does about twenty per cent. more light for the same consumption, when compared with the bats-wing burner, but being equalled in this respect by the best forms of Argand. It has also the advantage of giving warning by "blowing" when burning gas wastefully, which the bats-wing does not.

Dr. Rand was not prepared to condemn entirely the use of a contrivance so convenient and economical; but merely suggested the propriety of substituting for it, for purposes of reading, writing, sewing, etc., the steady flame produced by the bats-wing or the Argand burner. The former, from the shape of its flame, is not well adapted for a shade; the only objections to the latter are its requiring the use of a glass chimney and its liability under increased pressure to smoke. He had, however, used an Argand burner for years, and found it to give very little trouble, and was satisfied that no one who would compare the effects of the two for a single hour would ever exhaust his eyes by the flickering "fish-tail," when the steady sunlike blaze of the Argand was within his reach.

*Oct.* 7. *Fatal Enlargement of the Thymus Gland with Subjacent Tumour.*—Dr. Henry Hartshorne exhibited a specimen, obtained from a patient of Dr. W. H. Hazzard, in which disease of the thymus gland appeared to be the immediate cause of death.

The child was five months old when it died. It had always appeared to be healthy and well developed; and presented no symptoms of disease to attract attention, up to the moment of death. It was suckled by its mother at 2 o'clock of the morning of its decease, when it went to sleep as usual. At about 7 A. M., it was found dead, lying on its back, with blood about the nostrils, and the jugular veins distended. Examination of the body displayed no peculiarity except the morbid alteration of the gland, and the results of its pressure upon other parts. The heart was forced down close upon the diaphragm. The vena cava descendens contained an unusual quantity of blood. The thymus itself was very much enlarged; and, below the proper gland, but connected with it, and inclosed in a continuous enveloping membrane, was a mass whose appearance and consistence resembled those of fatty structure. At the time when first seen by Dr. Hartshorne, it had so shrunk and altered under the influence of alcohol, that no minute or microscopic inspection of its characters was practicable. Its dimensions, however, even at that period, were as follows: 3 inches in perpendicular length, 2 inches in width transversely, and $\frac{7}{8}$ of an inch in antero-posterior thickness; being fully twice the volume of the heart, and about half the size of the right lung. The thymus at that age (five months) averages commonly about $1\frac{1}{4}$ inch in length by $\frac{3}{4}$ of an inch transversely. In Sir Astley Cooper's monograph on the thymus, it is described as weighing about half an ounce, according to Meckel, at nine months, and increasing up to the end of the first year; after which it decreases.

Very little information, however, is to be found in systematic treatises, or elsewhere, in regard to the pathology of the thymus gland. A quite similar case to the above was narrated, with a drawing, by Herbert Browne Beck, in *Guy's Hospital Reports*, 1st series, vol. vi. p. 188. The principal difference, in Beck's case, was, that the fatal result, occurring in the fourth month of the child's age, was preceded for a length of time by paroxysmal attacks of dyspnœa, cough, &c.; which were quite absent in the case of Dr. Hazzard's patient.

Rokitansky simply expresses a doubt whether the "thymic asthma," described by Drs. Kopp, Hirsch, Montgomery, and others, as occurring in delicate children, is connected with enlargement of the thymus. It is asserted by Handfield Jones and Sieveking, that it does not necessarily depend upon this, as the asthmatic attacks have been shown to occur, in some instances, with an unnaturally small thymus, and to be absent in other cases where the gland was enlarged. Simon mentions a case in which suffocation was occasioned by the pressure of a tumour apparently of a sarcomato-cystic character, in the situation of the thymus; and Sir Astley Cooper met with a case of encephaloid growth in this part.[1] Dr. Gross states, in his *Pathol. Anatomy*, that no well authenticated case of steatomatous degeneration of the thymus is upon record. The case under consideration might be considered as one rather of fatty *deposit*, or hypertrophy, than of degeneration. There is some interest in remembering, in connection with it, the fact stated by Simon, in his Essay on the Thymus, that this gland is annually converted, in the hybernatory rodentia (as the marmot), into a large *fatty mass;* and that in the ophidia, especially those which are capable of hybernation, an accessory *fat body* is associated with the gland.

There was nothing tuberculous in the organization of the child from which the preparation exhibited was obtained. The main singularity of this case—beyond the comparative rarity of recognized affections of the thymus—was the absence of premonitory symptoms. Death seemed to be accounted for by the pressure of the tumour on the descending vena cava and right side of the heart, so as to obstruct the circulation to a fatal degree; but why this pressure should not have occurred before, to such an extent as to produce symptoms of congestion of the brain or lungs, is difficult to explain.

Dr. CONDIE had some doubts whether the symptoms were not due to an undeveloped state of the lungs rather than to enlargement of the thymus. Nearly all of the late writers, especially German, have concluded that Kopp's asthma is not produced by enlargement of the thymus gland. There are three or four cases in the German journals in which tumours below the thymus have produced disturbance of the circulation and respiration, and finally death; but these have nothing to do with the size of the thymus. In this case I cannot believe that so soft a body could have pressed down the heart or interfered with the circulation of the bloodvessels of the neck. Still the physiology and pathology of this subject are unsettled.

Dr. H. HARTSHORNE called attention to the fact that in this case the compressing agent was not only the thymus, but a tumour beneath the thymus. Here the death was sudden; a child of four months, previously well, found dead—no other cause of death being apparent. The child was well developed; had had no asthmatic symptoms. The distension of veins seemed most *probably* to depend on pressure of this tumour.

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[1] Jones and Sieveking, Path. Anat., p. 541.

*Congenital Malposition of the Liver.*—Dr. J. C. MORRIS drew the attention of the College to the following notes of an autopsy made by him:—

During the summer of 1853, I was for a time resident at the Episcopal Hospital, and thus met with a case in which a mistaken diagnosis was made in consequence of an unusual anatomical peculiarity. Mary Buchanan, aged 50 years, was admitted on the 23d of July, suffering with extreme œdema of the legs and ascites. She was very feeble; coughed incessantly day and night, and retched frequently; the skin of her legs had ulcerated in many places from the distension by fluid, which oozed away so fast as to form a puddle under her feet while sitting till a bed could be prepared for her. I could not detect any cardiac disease; the urine was highly albuminous, but not more so than is often the case where the kidneys are not degenerated; the ascites was not so great as to interfere with the recognition of hepatic dulness on percussion, extending downward almost to the crest of the ilium, on a line with the umbilicus. It was, therefore, supposed to indicate enlargement of the liver as the cause of the dropsy. She was subjected to an ordinary routine treatment of stimulants and tonics, calomel, squill, and digitalis, cream of tartar and juniper berries, until she finally sank on the 22d of August. On opening the thoracico-abdominal cavities, the heart and lungs were found to be healthy; the liver also appeared perfectly normal in structure, but instead of occupying the concavity of the diaphragm, it was lying on the right side, so that the left lobe occupied the ordinary position of the right lobe, while the latter was forced downwards and forwards. This appeared to be congenital. Both kidneys were far advanced in granular degeneration.

*Nov. 5. Foreign Body in the Lungs.*—Dr. WOOD stated that he wished to make a brief communication to the College on a somewhat interesting event which had come under his notice. He would begin by quoting from the Quarterly Summary of the Transactions of the College, Nov. 1, 1854, the following statement by Dr. Pepper:—

"Within the last few weeks, I have examined the case of a little girl supposed to have a piece of filbert shell lodged in the lungs; the physical signs, as well as the previous history, render it highly probable that such is really the case; and yet, although it is now about one year since the accident, the general health is but little if at all impaired, the only inconvenience being a slight occasional cough."

This patient, Dr. Wood went on to say, was a niece of his own, and was about six years old at the time of the accident, which happened in May, 1853. Ever since that time, up to a recent period, she had been subject to a cough, sometimes milder, sometimes more severe, with occasional violent paroxysms; and, upon slight exposure, or even without exposure, attacks of bronchial inflammation with more or less fever would supervene, sometimes confining her to bed, and lasting several days or even weeks. There was frequently a wheezing sound to be heard in her respiration at a little distance; and bronchial râles, sibilant, sonorous, and mucous, were observable upon auscultation more or less at all times, and in almost all parts of the chest, but loudest over the upper part of the right lung behind. There were never any physical signs of pneumonia; no blood or pus of any amount was known to have been expectorated; no consolidation of the lung was in any portion or at any time discoverable. What local disease existed appeared to be purely bronchial.

At one period there was so much paleness, emaciation, and debility, as to suggest the idea that tuberculosis might be impending; but the symptoms improved under the continued use of cod-liver oil and a nutritious diet.

Great care was at all times taken by the parents that the child should not be exposed to the danger of taking cold, and that she should not be allowed to over-exert or fatigue herself. When the symptoms of acute bronchial inflammation were apparent, moderate treatment of an antiphlogistic character was adopted; as rest, low diet, and the use of gentle saline cathartics and refrigerant diaphoretics. At other times an expectorant mixture was occasionally used, with a little solution of morphia in it, to control the cough when troublesome.

While absent from the city in August last, Dr. Wood received a letter from the mother of the child, informing him that, in a suffocative paroxysm of coughing, she had suddenly thrown up the offending cause, which proved, as had been supposed, a piece of filbert shell, and that since that time the cough had disappeared, and the child been restored to health. On his return he examined the chest carefully, and could discover no abnormal sound; and at the present time the little girl is free from every sign of disease.

The fragment of shell was discharged on the 16th of August last; so that it had remained within the chest for at least four years and two months. The mother stated that when she first saw it, there appeared upon its surface a covering of somewhat tenacious matter, having an offensive smell. Dr. Wood presumed that the piece of shell had been lodged during this whole period in the right bronchus, where it had probably become fixed immovably in consequence of its size. It is of an irregularly oblong shape, with one rather sharp and projecting angle, somewhat concavo-convex, four-tenths of an inch long, by somewhat more than three-tenths in breadth, and about one-tenth in thickness.

Dr. Wood exhibited the fragment to the College.

Dr. GILBERT said that he was acquainted with a boy who, in the fifteenth or sixteenth year of his age, discharged from his air-passages a trunk nail, five-eighths of an inch in length, which was supposed to have been swallowed several years before its expulsion. The health of the boy was subsequently improved.

*Chronic Disease of the Urinary Organs characterized by Anomalous Symptoms.*—Dr. Ruschenberger read for Dr. O. J. Wister, of Germantown, the following communication:—

The diagnosis of internal tumours is admitted to be sufficiently difficult and uncertain; and the following case, in some degree illustrative of this, may not be entirely without interest.

The patient, aged 64, of active and temperate habits, and free from hereditary predisposition to any of the diseases which are ordinarily believed to be transmissible, applied to me early last spring. He complained of loss of appetite, and slight pain and nausea, which occurred about an hour after taking food and continued in a greater or less degree for two or three hours. There was no epigastric tenderness, the tongue was moist and slightly furred, the bowels somewhat sluggish, and the general strength rather diminished; but beyond the inconvenience already mentioned, there was no complaint. The case seemed to be one of laborious digestion, arising from debility of the secreting apparatus of the stomach. I directed him to take five drops of nitro-muriatic acid, with some comp. tinct. of gentian, before each meal, and a pill of blue mass and comp. ext. colocynth at bedtime, should the bowels remain torpid. Under this treatment he so far improved, that after three or four visits he no longer came to me, and I lost sight of him till the early part of October (about six weeks before his death), when I was sent for.

At this time he was extremely feeble and very much emaciated; his complexion had a pale ashy hue, the tongue was coated and rather dry, the pulse frequent and compressible, and the whole appearance haggard and worn. He said that for several weeks he had not been so well, but hoped to get on without assistance; and had, therefore, not applied for aid until the rapid increase of his symptoms had alarmed him.

The discomforts of the spring had returned in an exasperated degree; the loss of appetite was total, and the nausea had increased to vomiting almost every article of food as soon as it was swallowed. Still, he spoke of but little pain, and the epigastric tenderness was so inconsiderable that firm pressure was easily borne. After many questions, he finally informed me that when he lay on his back the abdomen became hard; and on putting him in that position, I discovered a tumour which extended from the pubes to about an inch above the umbilicus. The tumour was sufficiently prominent to be obvious to the eye alone; whilst on pressure it yielded to the hand a sensation at first somewhat elastic, but when more firmly pressed it seemed fleshy. The examination gave the patient no pain, nor did the manipulations produce any desire to pass water, as might have been anticipated had the disease involved the bladder. The patient stated that for some years he had been accustomed to urinate more frequently than in earlier life, but did not think that it required any particular effort.

Finding that some enlargement of the prostate gland existed, I introduced a catheter, from which trickled about a tablespoonful of natural-looking urine, and then the discharge stopped.

During the period of my attendance, the tumour always presented the same characteristics, and the urine continued to be passed regularly, and in sufficient quantities. I concluded that he had chronic inflammation, or possibly cancer, of the stomach; and the probability of the latter being the case was much increased by the appearance of coffee grounds vomiting, which took place repeatedly for some days preceding death. As to the nature of the tumour I felt unable to decide, its obscurity baffling all certainty.

*Autopsy, fifteen hours after death.*—On opening the abdomen, the tumour proved to be the bladder, dilated to the capacity of a quart, and filled, but not distended, with urine. Old and firm adhesions connected the organ with the walls of the abdominal cavity, as well as with some of the neighbouring viscera; and I presume the small discharge of urine, which followed the introduction of the catheter, was due perhaps to these adhesions, which prevented the contractions of the bladder; while as the patient lay on his back, but a small quantity would be enabled to escape by gravity alone. The muscular coat was greatly thickened, but otherwise the organ presented a healthy appearance.

The lateral lobes of the prostate gland were enlarged about one-third, and had the effect of reducing the orifice of the bladder to a very narrow longitudinal slit, through which the urine must have been expelled with difficulty; and hence the dilatation and muscular hypertrophy. The right ureter and the pelvis of the corresponding kidney were much dilated, and the cortical portion of the kidney itself was rather diminished—otherwise it was normal.

The stomach exhibited every evidence of widely spread and long existing inflammation; the mucous membrane being generally thinned and softened, and in many places entirely removed, but towards the pylorus it was thickened and dark-coloured. The dimensions of the organ were greatly increased, but its functional ability must have been almost entirely lost. The liver and other viscera, save those already named, were quite healthy.

In reviewing the case, it seems strange that disease so situated and so extensive, could yet have given so little notice of its presence, that the comfort and physical capacity of its victim were not seriously affected until within a few weeks of dissolution.

*Fatal Disease of the Appendix Vermiformis.*—Dr. Caspar Wister read the following paper:—

The appendix vermiformis exists only in man and two superior species of the quadrumana, the orang and the ape. It is the type of the prolonged cæcum common to all other mammiferous animals. During fœtal life it is continuous with the cæcum, and of the same size, and is developed from the cul-de-sac of the latter. Bischoff admits that the earliest recognition of its origin was by Meckel, in a fœtus seven lines in length.

The appendix is ordinarily three inches long, with a diameter of two lines, but is subject to great variety of size as well as position. Occasionally it is entirely absent, while Welga has seen it nine inches long, with many convolutions, and Autenrieth four, and as large as the colon.

It is entirely enveloped by the peritoneum, which forms for it also a true mesentery, holding it loosely in position. The muscular coat is not in bands, as in the colon, but surrounds it as in the rectum. The lining membrane is contiguous with that of the cæcum, and forms a valve at the entrance, the falciform edge of which looks towards the right and downwards. This valve, in most instances present, prevents the introduction of foreign bodies, but permits free exit to mucus, of which in adults there is a large supply, with rarely any admixture of alimentary matter; in infants, on the contrary, it is filled with meconium. The glands within are very numerous, and of the solitary variety. The extremity of the appendix is found at times in the pelvis, more commonly posterior to the colon; its position is entirely uncertain.

The function of this body is supposed to be similar to that of a gland; it furnishes an acid secretion which causes the chyme in the cæcum suddenly to acquire the property of reddening litmus paper.

The subject of the following notice was a boy of five years of age, fair skin, light eyes and hair, and delicate physical development, the son of a father lately dead with phthisis.

This child was visited professionally on the first of November; he was at that time out of bed and in his ordinary dress. His expression was languid; he had much fever, with a pulse of 130; his tongue was covered with a slight white deposit, through which the papillæ were projecting, the tip and edges being unusually red. He complained of pain in the abdomen, describing it vaguely as "stomach ache," without giving it any locality. This pain was spasmodic, recurring at short intervals; sharp and griping, but followed by complete relief. At this time there was no pain upon pressure, or soreness over the abdomen. On the afternoon of the day but one preceding, an ordinary walk had been followed by complaint of much weariness, and in the course of the night by the first expression of pain, and this without any chill. Throughout the following day there had been some fever and pain, but this was not thought of sufficient gravity to require medical interposition. There had been no motion of the bowels during the forty-eight hours immediately preceding the first professional visit; and at that time the case had the aspect of an ordinary slight attack of colic, with the sympathetic fever natural to a child of sensitive organization, teeming with sympathies ready to respond to slight disturbance of the economy. A mercurial purgative was directed, and a febrifuge at intervals. There had been no unusual article of diet taken, except a moderate quantity of chestnuts. The night was much disturbed, with an increase of both fever and pain; the latter still in paroxysms.

The morning of the 2d, in consequence of the purgative not having operated, a copious enema was administered, which produced a large fecal discharge, none of it of a dry or impacted description, but containing distinct evidence of the operation of the mercurial. The child expressed a sense of relief; and, after a dose of oil and a fomentation adjusted over the seat of pain, he was confined to bed.

The following morning, Nov. 3d, there was a spontaneous motion of the bowels, without any improvement; there was now tenderness over the abdomen although, during the paroxysmal pain, pressure with the hand was grateful. This pain continued the chief subject of complaint, engrossing the child's mind, and provoking constant expression of distress. He commenced frequent doses of small quantities of calomel, with full proportions of ipecacuanha and opium, and employed gum in solution largely as a diet.

On the 4th, the symptoms were more grave, greater pain upon pressure, some tympanitis, and soreness attending all motion of the person; the spasmodic pain still, however, caused most complaint, and recurred at short intervals. Leeches were now applied over the entire abdomen, all other treatment being continued except the use of ipecacuanha; this was withdrawn in consequence of slight vomiting. After leeching there was less complaint of pain upon pressure, and soreness and nausea disappeared, while stimulation was found necessary.

On the morning of Nov. 5th, he presented excessive tympanitis, constantly recurring paroxysms of pain, great restlessness, sunken features, some tenderness upon pressure, and a pulse of 140. The child was, after consultation with Dr. Wood, placed under the full effect of opium, with an increase of the mercurial, and a blister over the abdomen. The rectum was relieved of a large accumulation of gas by the introduction of a catheter, but all motion of the bowels was in vain solicited. Under the full effect of the opiate there was less exhibition of pain and restlessness, without any arrest of disease; tympanitis greatly increased, and compressing the stomach caused regurgitation of fluid, and much depressed the vitality of the entire organism.

*Nov.* 6. Small quantities of oil of turpentine, with full doses of the officinal solution of morphia, were administered, accompanied by further stimulation. Gradual sinking under the unchecked march of disease, aided by the accumulation of gas, terminated in death on the 7th of the month, seven days after the commencement of treatment; this being the result of a disease deficient in symptoms sufficiently distinct for satisfactory diagnosis, and only decided in the steadiness with which it resisted treatment.

After death the abdominal cavity was found dry, with indications of peritoneal inflammation, consisting most conclusively in a few patches of pasty lymph upon the intestinal surfaces. There was an engorgement of the vessels of the intestines, but being in longitudinal bars from the diaphragm to the pubis over the entire mass, there was some doubt as to the time of its occurrence, particularly as signs of incipient decomposition existed elsewhere. The intestines, from the pyloric orifice of the stomach to the sigmoid flexure of the rectum, were greatly distended with gas, and contained, beside, a large amount of fluid fecal matter. The stomach was empty and much contracted, the accumulation of gas having pressed it against the diaphragm, and in so doing caused the latter to encroach upon the thoracic viscera, thus rendering the last hours of life a most painful exhibition. The lining membrane of the intestinal canal was healthy throughout, and the cause of death was not manifest until the appendix vermiformis was examined. This was perforated at the lower extremity; the opening being large, with ragged edges, indicating ulceration, and partially filled by a plug of concrete matter of the size and much the shape of a date-stone, composed of small seeds, many of these, from figs, associated with concrete matter deposited in layers, and arranged in concentric circles.

In this instance, the extremity of the appendix rested in the pelvis upon the rectum, immediately over the fundus of the bladder; here an effusion of the contents of the intestines had occurred, but in small quantity, owing to the plug having filled the ulceration it had caused in the appendix.

The matter effused had given rise to excessive inflammation and the formation of much lymph, an attempt having been made to form an abscess and inclose the offending fluid. This deposit of lymph extended over a surface of three inches in diameter, was dark in hue, passing into gangrene; and, although adhering strongly to the intestinal surfaces, left them, when removed, healthy in appearance. Those surfaces of the sigmoid flexure of the rectum facing each other in the natural position were strongly adherent for a distance of three inches, and consequently prevented peristaltic motion at this point. This explained the retention of gas after the peritoneal symptoms became decidedly marked, although there had been a free passage of fecal matter in an earlier stage of the disease.

Again, the son of a very distinguished physician of this city, twenty-two years of age, passed Sunday evening in the society of his family and a small collection of his father's friends; he was gay and apparently in good health.

A few days previously he had complained of vague pains in the abdomen, not however of a degree to attract particular attention.

He retired on the evening above mentioned without any unusual sensations, but awoke before daylight with intense colic. This increasing, his father sent for a medical friend, after exhausting his own resources and failing to procure relief. Throughout Monday the symptoms of colic continued without abatement, and as the day wore on only presented indications of peritoneal complication. There was a large, though not excessive accumulation of gas, the most prominent feature of the case being excruciating pain, from which only partial relief was procured by complete narcotism. The bowels resisted every attempt to procure evacuation of their contents after the earliest stage of the disease.

On Monday night and Tuesday morning the agony of the patient began to abate, but only to be followed by collapse, with cold damp surface and failing pulse; he gradually sank, and died in the course of the morning, after an illness of thirty hours.

The abdomen was found after death much distended by gas, free from effusion, and not affording any evidence of excessive peritoneal inflammation. The effect of disease in this case could be traced with much confidence, as the examination was made on Tuesday afternoon, a few hours after death, and but a short time was allowed for decomposition to embarrass investigation.

The appendix was much distended at its lower extremity by a concrete mass composed largely of raisin seeds. Its walls had not been perforated, and contained, with the foreign matter, an accumulation of pus, the whole forming a mass the size of a walnut. The appendix partially embraced the ilium, adhering to it strongly, and completely strangulated the small intestines; which were, for a distance of six feet above, of a dark mahogany colour and passing into gangrene. At the point of strangulation there had been much inflammation with large effusion of lymph; the walls of the tumour were thin, bursting under pressure of the fingers; but, having retained its contents during life, there was no discharge of foreign matter into the peritoneal cavity giving rise to peritonitis and masking the earlier symptoms of colic, as in the case just described.

Moreau cites a case identical with this, the ilium having been strangulated by adhesion of the appendix to the mesentery; while Marteau has seen the jejunum, and Scarpa the colon, embraced in the same manner and with a like effect.

Klockhof reports a case in which the appendix adhered to the colon by its extremity, thus forming a loop through which the small intestines had passed, producing strangulation.

Merling, in examining a subject, found the appendix adherent to the colon by its lower extremity, and forming a free communication between different sections of the intestine, but was unable to learn anything of the previous history of the individual, or under what train of symptoms this union occurred, evidently followed by entire recovery.

Again, the appendix is at times metamorphosed into a hydropic capsule, as reported by Rokitansky, from the presence of a concretion in the tube closing the canal and preventing escape of the mucous secretion. This causes the extremity to become dilated, and the mucus to pass into the condition of a serous membrane secreting an albuminous fluid.

Beside the foreign matter collecting in the appendix mechanically, tuberculous and typhoid deposits are laid down at times in its walls, giving rise to ulceration. When, in addition to these varieties of disease, we consider the fact, that a long time may be required to establish the existence of serious symptoms, since it is asserted that a concretion may exist and only give rise to blennorrhœa, a correct diagnosis is only equalled in difficulty by its importance. Ulceration of the appendix is not necessarily fatal, but forms abscesses at times pointing in various directions, according to the variety of directions assumed by the appendix; and it is of great moment that these should be anticipated and discharged at the earliest period possible, and the risk of an internal rupture of their walls diminished. In the cases cited above, the earliest symptoms were of colic, excepting the obstinate constipation, the bowels having been freely evacuated without relief. In both, the earlier symptoms were overlaid by peritonitis; while in one there was an attempt to form an abscess, the constitution failing before it was accomplished.

Dr. LEVICK remarked that it would be a matter of interest to ascertain if there were any peculiar symptoms which would enable us to localize during life the seat of diseases of this kind. In neither of the interesting cases reported by Dr. Wister was there anything which could have directed attention especially to the appendix vermiformis, the phenomena presented being those of "colic without the ordinary constipation."

Though not of very frequent occurrence, diseases of this structure exist sufficiently often to render their observation of importance. Two autopsies had come under Dr. L.'s notice in which death had been produced by perforation of the appendix; while in a third case fatal strangulation of the intestine had been occasioned by a diverticulum closely resembling in size and appearance the vermiform appendage, but given off higher up the intestine. A record of this case was printed in the *Transactions of the College*, vol. 1, No. 10, N. S.; and, in the corresponding number of vol. 2d, a case of perforation of the appendix is reported by Dr. Gobrecht, and allusions are there made by other Fellows of the College to similar cases seen by them.

In the earlier symptoms of the first case reported by Dr. W., and still more so in that reported by Dr. Owen Wister, it would be remarked that there existed very serious disease with little or no pain. This absence of pain had been strikingly exemplified in some fatal cases which had come to the knowledge of the speaker.

The first of these was that of a man who died a few years ago in the Pennsylvania Hospital apparently of another disease; who had never complained of pain in either hypochondriac region. Upon examination, the liver was found to contain numerous encephaloid tumours. Another very similar case had recently occurred in the practice of a medical friend, in which there was no pain or other symptom leading to a suspicion of disease of the liver, which organ was found after death to contain quite a number of cancerous tumours. The third case was that of a man admitted into the hospital last summer, who presented many of the symptoms of cancer of the liver; this disease was diagnosticated, and the patient especially interrogated as to the existence of pain in the hepatic region, which he uniformly declared he was free from. A post-mortem inspection showed the liver to be enlarged, and fairly studded with medullary tumours. Here, then, were three cases of malignant disease of an important organ, in which one of the most distressing symptoms was absent. Other similar cases have been reported elsewhere.

Dr. COATES could not recall the case alluded to by Dr. LEVICK. He had no doubt of the correctness of Dr. L.'s description of it; but this, like many other cases, had occurred at a time when taking notes was, from personal causes, entirely out of the question. Dr. C. had seen several curious cases in regard to the appendicula vermiformis.

Foreign bodies, such as may obstruct the passages, are more easily tolerated in the cæcum than in any other part of the alimentary canal; from the anatomical and physiological character of the part, this cavity is adapted to quiescence, and to the gradual accumulation of feces; the motions for the removal of which are unfrequent. The part is firmly fixed, well supported in the hollow of the os ilii, and but little supplied with nerves, or with irritability of the mucous membrane. These characters were all exaggerated in the horse, whose cæcum was of enormous magnitude, and adapted to very bulky accumulations from the character of the animal's necessary food.

Dr. C. then mentioned the very large calculus in his possession, the chemical analysis of which had been published in the proceedings of the American Philosophical Society by Dr. Boyé.

This calculus appeared to be the largest on record. On reference to Berzelius, the latter authority was found to state that calculi of a similar description, weighing 5 or 6 pounds, were not uncommon in the museums of Germany. The one in question weighed 11¼ pounds. It was originally in the anatomical museum of the Pennsylvania hospital, and was presented to Dr. Coates by the late Zaccheus Collins, Esq., in the name of the committee in charge, as a mark of respect for the labour bestowed on the museum by the former. From the record pasted on the stone, in the handwriting of the late SAMUEL COATES, it appears that the horse exhibited no visible signs of disease till within a week of his death. It occurred in a horse belonging to the late Mr. Peter Adams, miller, of Montgomery County, Pennsylvania. It was in the collection of an association called the School of Medicine, and was for several years in the possession of Prof. GIBSON. At a later period, the analysis of Dr. Boyé was made, and discovered it to be a mixture of the paleæ of oats, with a cement of phosphate of magnesia, the latter not exactly corresponding, as appears from the memoir of Dr. Boyé, with the atomic proportions of any of the phosphates of magnesia then on record; Dr. Boyé giving his own formula in his paper. After the process of Dr. Boyé, performed on fragments, the mass was sawed through the middle by Dr. Coates, who found it composed of concentric strata, most of them similar in appearance to the external parts, but some of them of a slate-blue colour, a greater degree of hardness and a finer grain, with less exhibition of a chaffy structure; all surrounding one of those nails used to secure the shoes of horses.

*Foreign Body retained upwards of Twenty Years in the Nasal Passage.*—Dr. Hays stated that the interesting case communicated to the College at its previous meeting by the president, in which a foreign body had remained four years in the lungs, recalled to his mind a case in which a foreign body had remained in the nose for, probably, upwards of twenty years, and a brief notice of which might interest the Fellows.

Some years since I was consulted by a lady of between twenty-five and thirty years of age on account of ozæna, with which she had been troubled ever since childhood. The disease resisted various means of treatment, and I discontinued my visits and lost sight of the case.

About four years subsequently, a Fellow of the College, Dr. Wm. Darrach, inquired of me if I recollected the case, and stated that the patient had afterwards fallen under his care, and that finding it very intractable, he had determined to examine into the condition of the bones of the nose. With this object he introduced a probe through the nose into the nasal fossæ, and while moving this instrument about there, he accidentally dislodged a mass which dropped into the opening of the nostril, and by an effort on the part of the patient was expelled. On examination, it proved to be an old-fashioned glass button with a brass wire eye.

The mother of the lady stated she remembered distinctly that one of her sons, when a child, had had a coat with similar buttons.

Dr. D. supposed that the lady, when a child, had been playing with one of these buttons, had placed it in her mouth, whence it had slipped into her throat and produced strangling, and that in the effort to expel the button it had been forced up through the posterior nares and lodged in the nose. Here as a foreign body it had become a source of irritation, and produced the disease for which we had been consulted.

*Epistaxis arrested by the Administration of Common Salt.*—Dr. Caspar Morris reported a case of obstinate epistaxis, which had yielded promptly to the use of common salt taken into the mouth in doses of a teaspoonful. The idea of employing this remedy had suggested itself to Dr. M. while apprehending the probable necessity for resorting to mechanical means for the relief of the hemorrhage. Dr. M. was not aware that it had been employed in the treatment of this form of hemorrhage, and thought that, though apparently a trifling matter, the hint might prove important in some cases of this troublesome and sometimes fatal disease.

*Placenta Prævia.*—Dr. Rhoads read the following account of a case of placenta prævia: Having had my attention arrested by an original explanation of the spontaneous cessation of hemorrhage during labour, in certain cases of cervical attachment of the placenta, offered by Dr. Barnes in a lecture published in a late number of the *London Lancet*, I am induced to lay before the College the following case as illustrating the views there set forth.

I was called, 9 mo. (Sept.) 9, 1857, to see J. B., who had suddenly been seized with uterine hemorrhage. She was an apparently healthy woman, the mother of three children, and believed herself near the fifth month of pregnancy with her fourth child. I learned from her that, subsequently to the birth of her last child, she had suffered severely with inflammation of the womb, but that she finally regained good health, except having occasionally some leucorrhœal discharge.

She had retired that evening in usual health, and was awakened by a sudden gush of blood from the vulva, which, however, had somewhat subsided by the time of my arrival. Under the use of opiates and rest in bed for two days all symptoms of abortion disappeared; but, on the 13th, the hemorrhage again occurred more freely than before, with pain in the back and hips. Opiate enemata, and afterwards pills of opium and acetate of lead, were resorted to; and she was kept in bed for six days, only then being allowed to go into another room and recline upon a sofa.

Notwithstanding great carefulness, regular labour pains came on during the evening of the 23d, attended with such profuse hemorrhage that, when I saw her at 11 P. M., she was already blanched and feeble. The pains, which were weak and at long intervals, were accompanied and followed by an abundant discharge of blood, which gradually subsided in the intervals. The os uteri was sufficiently dilated to admit readily the introduction of the finger; but, as it was high up and surrounded by clots, no presentation could be perceived. The motions of the child were distinctly perceptible to the mother, and by the hand placed upon the abdomen.

As an abortion seemed inevitable, ergot was administered with the hope of bringing on more active pains. This result followed, the os uteri expanded to the size of a quarter of a dollar, the peculiar spongy feel of the placenta was recognized; and, as the hemorrhage was yet free, a tampon was inserted and stimulants given.

The tampon controlled the bleeding, and after remaining three hours it was removed, when the hemorrhage was found to have ceased. The os uteri was dilated, with the edge of the placenta protruding through it, the remaining portion of the latter being still adherent to the left and posterior part of the cervix. The finger was passed up beside the placenta to the membranes, which were ruptured, and the presentation found to be a footling one. Traction upon the oot was used, and the fœtus readily delivered. The placenta still remained attached to the uterus, and required to be separated by the hand. Its tissue appeared to be normal but unusually firm.

Now what is the rationale of this simple yet interesting case? The primary cause of the abortion was, probably, the unhealthy state of the womb consequent upon the acute inflammation it had undergone as shown by the leucorrhœal discharge. The uterine contractions parting successive portions of the placenta, hemorrhage ensued from both the placental and uterine surfaces thus exposed; which hemorrhage was abundant during and just after the contractions, and subsided in the interval.

The pains were twice allayed by the opiates, but, finally continuing, the portion of the placenta implanted over the os uteri was wholly detached from and protruded through it. Now, since the longitudinal fibres of the uterus contract less near the cervix than towards the fundus, no further disjunction of the placenta took place; no new source of hemorrhage was supplied; while the pressure, during the presence of the tampon, had stopped the previously bleeding vessels by coagula. For the same reason the after-birth remained adherent after delivery, and required to be peeled off by the hand, the facility with which this was done proving the absence of any abnormal adhesions.

The remark of Dr. Simpson, that in these cases the child has usually been long dead, and that hence the vascularity of the placenta and of the parts to which it is adherent has greatly diminished, did not apply in this case, as the fœtus was certainly alive at the commencement of the labour.

1858, *Jan.* 6. *Melanotic Tumours of various Thoracic and Abdominal Viscera, without External Evidence of Melanosis.*—Dr. GRISCOM gave the following verbal account of a case, the fatal termination of which he had recently witnessed:—

On the 3d of 9th mo. (Sept.), 1857, I was asked to see M. M., æt. about 58 years, who was then residing a short distance out of the city. I found her in her bed, with some pain in her right side. She had moderate fever, a rather harassing cough, with congestion of the lower lobe of the right lung; much burning of the hands and feet; a tendency to sweat at nights; an exceedingly irritable stomach, with water-brash and gastrodynia; her alvine evacuations were light-coloured, and her conjunctivæ were somewhat stained with a bilious tinge. The water-brash was entirely relieved by bismuthi subnit.; her fever subsided under the use of refrigerant diaphoretics, and she became in all respects so much better as to ride out, and on the 22d of 10th mo. (Oct.) came to the city.

She appeared a good deal exhausted by her ride, and continued to suffer much prostration from slight exertion. She was, however, well enough to be down in the parlour a part of the time, and acknowledged but little discomfort, excepting a continual soreness in the right side over the upper surface of the liver, and a repugnance to all food excepting *buttermilk*—of this she partook freely, and seldom rejected it, while every attempt to change her diet was followed by speedy vomiting. Her pulse during this period was uniformly about 80, her respiration natural, and very little cough, but her night-sweats increased; the burning of hands and feet became intense, and her skin was rapidly growing pallid. The liver was somewhat enlarged, and pressure over it gave pain; a hardened mass could be felt in the region of the pyloric orifice of the stomach.

Towards the close of the year, the pain in her right side became at times very severe; she was now obviously losing strength, and without any marked change in her symptoms, she died on the evening of the 4th of 1st mo., 1858.

Her previous history, as learned principally from a very intelligent acquaintance, is, that at 25 she was a vigorous young woman, with a florid colour and active temperament, but subject to hemorrhages from the mouth after severe exertion; the discharge of blood was not accompanied by cough, but was supposed to come from her stomach. She had been affected with water-brash and gastrodynia at times for the last twenty years, with precarious appetite and a very irritable stomach, accompanied by headache; she had also at times mild articular rheumatism, but was considered generally to enjoy good health. About a year ago it was obvious to her friends that her vigour was diminishing, although she did not acknowledge it.

The post-mortem examination was conducted by Dr. Levick, assisted by Drs. Griscom, Stroud and Whartenby.

Dr. Levick then exhibited a portion of the diseased structures, and gave the following description of the appearances observed at the autopsy:—

The *exterior* was pale; no discoloration; a slight layer of fat in the line of incision.

*Thorax.*—Upper portion of the pleura slightly adherent. An unusual amount of dark pigment matter on the anterior surface of each lung. On removing the lungs from the thorax, this dark deposit was found in great abundance, both anteriorly and posteriorly. It appeared to be placed beneath the pleura, near the surface of the lung itself, arranged in thin curved layers, corresponding somewhat to the outline of the ribs. Besides being deposited in this form, there existed also numerous round black tumours, in size varying from a pin's head to a filbert. From the base of the right lung a melanotic mass about three-fourths of an inch in length projected towards the diaphragm.

The *bronchial glands* were enlarged, and full of soft melanotic deposit.

The *heart* was of natural size, the muscular structure of the right side having undergone to an unusual extent the fatty degeneration. The valves were healthy. The aorta contained slight atheromatous degenerations with a scarcely perceptible discoloration of its lining membrane.

The *liver* was of a pale violet hue, and imparted a doughy sensation to the finger. More than thirty black tumours, varying in size from a pea to a horsechestnut, were found on the under, and numerous similar masses on the upper surface of the gland. The interior structure was dotted throughout with minute black points.

The *gall-bladder* contained a quantity of dark bile, and a calculus of the size of a marble. Two masses of a greenish black colour projected from its lining membrane, and hung loosely into its cavity. In colour, consistence and general appearance, these closely resembled clots of blood undergoing decomposition; but were found, on close examination, to be of the same pigmentary formation.

The *spleen* was enlarged, and of a rich garnet colour.

The *pancreas* was hard, tumefied, and contained numerous melanotic tumours.

The *stomach* was ulcerated near the pyloric orifice; this latter was much narrowed. The whole of the lining membrane was dotted with small black patches. A similar discoloration existed throughout the whole tract of the intestines.

The *kidneys* were of natural size, and contained on their outer surface several small melanotic tumours. Three small black masses hung loosely in the cavity of the left kidney, while the lining membrane of each pelvis was studded with minute black patches.

The *uterus* was in size, &c., natural, but on the anterior and posterior lips were observed similar black patches encircling the os tincæ.

There would appear to have been in this case a remarkable tendency to the pigmentary or melanotic formation. Every internal tissue examined, with the exception of the circulatory apparatus, exhibited this. The infiltration, if we may use the word, extended to both normal and abnormal structure. That such was the fact, was proved by careful microscopic examination. Sections of the tumours taken from the liver were found by Dr. S. W. Mitchell to contain, beside the pigment granules, numerous characteristic cancer cells. In an examination of the melanotic matter taken from the different organs by Drs. J. Darrach and Levick, the masses in the kidney and pancreas were found to consist of cells and granules. The cells were filled with large granules and had large nuclei, with two nucleoli. The colouring matter from the lung was deposited in the sub-serous cellular tissue, and consisted solely of granules. This was much darker than that deposited in the kidney, liver and pancreas. Nitric acid added to the latter produced a yellow colour; with the former no change was effected. The deposit on the tissue of the pelvis of the kidney was of the same nature as that in the lung, nitric acid having no effect upon it.

It will be noticed that though the supra-renal capsule was so much affected, there was no discoloration of the exterior of the body.

1858, *Feb.* 3. *Annual Report on Meteorology and Epidemics.*—Dr. Wilson Jewell presented and read the following report:—

The year 1857 has been one of almost unexampled health. With the exception of scarlet fever, which prevailed to some considerable extent, during the first quarter, no fearful epidemic has desolated our dwellings. The usual endemics have been less aggravated and fatal in their character, while the march of disease generally has been tardy in its progress, having failed to return its accustomed complement of deaths.

This acknowledged preservation of the health of our city cannot be attributed to the adoption of any special legislation for the removal of those injurious agencies which owe their origin to large cities, and are ever active in lowering the natural standard of mortality.

That there are existing causes for this unusual health will be readily admitted. But whether they are to be sought for in some concealed alteration of the usual sanitary condition of our city, or have their origin in the meteorological and climatic elements surrounding us, which are beyond the control of the hygienist, is a problem of great interest, but one that we are not now called upon to decide, as its investigation is of sufficient importance to entitle it to a separate consideration.

Notwithstanding, however, our apparent immunity from the visitation of any violent epidemic, it is undeniable that there lurk in our midst numerous patent, as well as latent disturbing causes, from which it is manifest the annual harvest of death is made rich. This opinion is verified by the fact that no less than 2,412 deaths have been recorded, during the year, from causes which are recognized as removable, or amenable to the observance of the laws of hygiene—morbid agencies, that would not have a place or a name upon our professional escutcheon, had we approached even within sight of the highest aim of the science of hygiene, "to the ultimate line of physiology—to death without disease." (*Blumenbach.*)

Few cities in the United States are more favourably located or enjoy a greater share of health than Philadelphia; and yet the force of circumstances, as developed by our mortuary statistics, compels us to acknowledge this fact, that there do exist disturbing influences—secondary causes, producing the germs of disease, the removal of which are not only neglected by the authorities, but, more than this, they are positively uncared for, it being neither expedient nor politically profitable, as a municipal measure, to inquire into their whereabouts and hasten their removal.

It is, or at least it should be, a subject of regret with every intelligent physician and philanthropist, that "the slow, continuous, increasing inroads of diseases, less rapid and alarming, but as certain and fatal as they are insidious," should excite so little anxiety and attention in the community. "The outburst of the epidemic will lead to a spasmodic effort at cleanliness, but the spirit of vigilance, thus engendered, dies too often with the causes which called it forth." (*Newman.*) The weekly bill of mortality, if read at all, is read with no apparent solicitude. It calls forth no inquiry. It is only when the deaths are in excess from any one disease that the attention is arrested, and even then only for a moment.

It can hardly seem possible, that for every day on an average, throughout the year, upwards of thirty of the inhabitants of our city should pass away to the grave, and yet "the mourners go about the streets" unheeded. Nor does it but seldom, if ever, become a matter for serious inquiry, how many of these could have been saved an untimely death, by the intervention of a system of preventive measures faithfully administered.

It cannot be too frequently repeated that the abuse, neglect, or the violation of the laws of health, are at all times fruitful sources for a lengthened catalogue of unnecessary and preventable diseases, as well as for a large share of the mortality of our city. This annual waste of life, as a sequence of neglecting the faithful observance of sanitary regulations, is alarming, while it is not correctly appreciated. Its continuance is a blot upon the philanthropy of the people; it impugns their intelligence; it mars their comforts and saddens their enjoyments of life, and as it should be the first duty of every government to preserve the health and lives of its citizens, the attention of the authorities should be frequently directed to the subject, until it becomes with them the "great question of the day," and until, through their investigations, the producing causes shall be corrected, and the evils we have referred to be removed.

It is to be regretted, in the absence of a registration law, that there are no data by which we can compare the deaths in our city population with those in rural districts of the State. It is, however, an established truth, and has attained an unenviable notoriety, that the proportion of deaths to population is not only greater in cities, but that the average duration of life in cities is much below that of a residence in the country.

According to the reports of the Registrar-General of England, and presented in a statement drawn up by Dr. Guy, the relative mortality to population between town and country, is equal to 1 in 15 in favour of a country life; that is, he shows the rate to be 1 in 52 in the country, and 1 in 37 in towns. Taking this calculation as our guide, and fixing the death rate in our city 1 in 45, the average for five years from 1850 to 1854 inclusive, we have been hurrying to the grave annually 15 per cent. of the deaths recorded in our mortuary tables from causes peculiar to cities, all of which may be classed with deaths from preventable diseases. An English writer (Lee) on the comparative rates of mortality, has ventured the opinion, "that diseases of the class termed preventable are not inherent in, essential or peculiar to places of dense population," and his reasons are, that surplus water and organic filth, unremoved by drainage, without reference to other considerations, will inevitably increase the rate of mortality. We can readily understand, therefore, that in the midst of a crowded population, in confined and badly ventilated neighbourhoods, the poison evolved exerts a fourfold influence over that of an open and sparsely settled locality, and hence the increased amount and high rate of mortality in cities.

But it will be impossible, in our limited report, to present this subject in all its important bearings, as it involves questions appertaining to our physical, social, and moral interests, which cannot be too highly appreciated or too ardently investigated. Suffice it to say, that "if the losses from evident neglect in hygienic precautions in our cities could be accurately estimated, the statements would be astounding."[1] During the year under consideration (1857), in our own city, the deaths known in the classification approved by the American Medical Association as zymotic, embracing epidemic, endemic, and contagious diseases, and which are ascribed to removable causes, amounted to 2,412, or 23 per cent. of the mortality, and of this number, 2,018, equal to 83 per cent., were in children and youth. To calculate the amount of sickness, on which these deaths depended, according to Dr. L. Playfair's theory, of 28 cases for each death, will involve 47,536 instances of unnecessary sickness. Add to this fearful picture its unnumbered calamities, the broken down health, the ruinous expenditure, the loss of wealth, of business, of friends, and the social, mental, and moral sufferings that follow in the train of evils, and we present but a faint view of the privations experienced in every community, from an ignorance of the laws of health and life.

To the politeness of our friend, Professor James A. Kirkpatrick, of the Philadelphia High School, are we again indebted for the following abstract of his meteorological observations for the year. These observations are made with great accuracy for the Smithsonian Institution, and from the well known character of Prof. K. for investigations of this nature, they are entirely reliable.

The mean temperature of the year was 53.48°, which is higher by 1.56° than in 1856; but a very little less, say 0.19°, than for the last six years. The coldest day of the year was the 18th of January, the mean temperature being 1°; the minimum temperature, however, 5½° below zero, occurred on the morning of the 24th of the same month, and was the lowest degree observed for the last six years.

The warmest day was the 14th of August, when the mean temperature was 87°; the maximum, 94°, occurred on the same day.

The mean temperature of the month of March was nearly 1¾° lower than that of February; the anomaly occurring in the latter month, it being more than 7° warmer than the mean for six years, while March was but 1¼° colder than usual. The same departure from general laws manifested itself through all the meteorological phenomena of February. The barometer was nearly half an inch higher. The dew point was 18° higher. The quantity of rain was less than one inch, while the average amount for the same month for six years is 2.647 inches. Notwithstanding this deficiency of rain, the force of vapor and the relative humidity of the atmosphere were greater than the average; and the direction of the wind was 29° more southerly than usual for that month. Indeed, the direction of the wind for the whole year has been nearly as much S. of W. as it usually is N. of W., as will appear by an inspection of the table.

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[1] Rep. on Hygiene, Trans. Am. Med. Assoc., vol. ii. p. 534.

The mean daily oscillation of the thermometer was 14.9°, the greatest being 30° on the 6th of April, and the least 2° on the 20th of February. The mean daily range of the thermometer, being the comparison of the temperature of one day with that of the same hours of the preceding day, gives for the year a variation of 5½°, the greatest being in February, and the least in July.

The range of the barometer was 1.626 inch—from 29.012 on the 26th of October, to 30.638 on the 12th of February.

The amount of rain that fell during the year was 48.448 inches, nearly 15 inches more than in 1856, and 5 inches more than the average for the last six years. The greatest quantity of rain in any one month was 8.039 in August; and the least 0.921 in February. The number of days on which rain fell was 132; the greatest number in any one month was 18, in June, and the least 7, in February. Snow fell to the depth of about two feet during the year. The greatest snow storm was on the 18th and 19th of January, when it fell on an average ten inches deep, but was drifted in some places to the depth of 6 to 8 feet.

The Delaware River was closed with ice about the 22d of December, 1856, and was not open again for navigation until the 8th of February, 1857. The latest ice in the spring was formed on the 8th of April. The first in the fall was on the 15th of November, though there was a pretty smart frost in the neighbourhood of the city on the night of the 21st of October.

*Abstract of Meteorological Observations made at Philadelphia, Pa , Lat.* 39° 57′ 28″ *N., Long.* 75° 10′ 28″ *W. from Greenwich, for the year* 1857. By Prof. JAMES A. KIRKPATRICK.

| 1857. | BAROMETER REDUCED TO 32° F. (Height above high water 50 feet.) | | | | | THERMOMETER. (F.) | | | | | | DEW-POINT, 2 P. M. | | | | Force of vapour, 2 P. M. | Relative humidity, 2 P. M. | Rain and melted snow. | WINDS. Monthly resultant; No. of times in 1000. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Monthly mean. | Monthly maximum. | Monthly minimum. | Monthly range. | Mean daily range. | Monthly mean. | Monthly maximum. | Monthly minimum. | Monthly range. | Mean daily range. | Mean of daily oscillations. | Monthly mean. | Monthly maximum. | Monthly minimum. | Monthly range. | | | | |
| | Inches. | Inches. | Inches. | Inches. | Inches. | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | Inches. | Hund'ths. | Inches. | |
| January . . . | 29.862 | 30.500 | 29.225 | 1.275 | .220 | 20.92 | 38 | —5½ | 43½ | 7.7 | 10.3 | 15.35 | 35.1 | —5.3 | 40.4 | .097 | 67 | 2.989 | N. 71° 3′ W., 454 |
| February . . . | 30.034 | 30.638 | 29.599 | 1.039 | .180 | 39.94 | 68 | 9 | 59 | 9.2 | 15.0 | 36.48 | 61.9 | 7.2 | 54.7 | .250 | 68 | 0.921 | S. 78° 26′ W., 301 |
| March . . . . | 29.839 | 30.304 | 29.229 | 1.075 | .200 | 38.23 | 63 | 9 | 54 | 6.4 | 15.0 | 28.64 | 48.0 | 10.9 | 37.1 | .167 | 55 | 1.773 | S. 81° 52′ W., 306 |
| April . . . . . | 29.733 | 30.240 | 29.163 | 1.077 | .188 | 45.44 | 64½ | 20 | 44½ | 6.0 | 15.8 | 34.49 | 50.3 | 12.7 | 37.6 | .210 | 55 | 6.932 | S. 84° 17′ W., 261 |
| May . . . . . | 29.748 | 30.193 | 29.402 | .791 | .144 | 61.22 | 86½ | 42 | 44½ | 4.8 | 15.8 | 47.33 | 63.5 | 26.7 | 36.8 | .343 | 51 | 6.043 | S. 63° 26′ W., 210 |
| June . . . . . | 29.663 | 29.894 | 29.182 | .712 | .094 | 71.21 | 88 | 50 | 38 | 4.2 | 14.4 | 59.31 | 70.4 | 43.8 | 26.6 | .518 | 57 | 7.426 | S. 72° 11′ W., 187 |
| July . . . . . | 29.808 | 30.071 | 29.469 | .602 | .070 | 77.26 | 91 | 53 | 38 | 2.9 | 14.5 | 64.84 | 71.2 | 53.6 | 17.6 | .621 | 57 | 3.373 | South 190 |
| August . . . . | 29.811 | 30.040 | 29.539 | .501 | .115 | 75.26 | 94 | 60 | 34 | 3.2 | 15.3 | 63.24 | 74.3 | 54.7 | 19.6 | .590 | 56 | 8.039 | S. 63° 26′ W., 226 |
| September . . . | 29.936 | 30.244 | 29.630 | .614 | .109 | 69.17 | 87 | 44 | 43 | 4.6 | 17·5 | 55.34 | 71.2 | 34.6 | 36.6 | .460 | 51 | 1.132 | N. 82° 52′ W., 150 |
| October . . . . | 29.830 | 30.199 | 29.012 | 1.187 | .161 | 56.19 | 77 | 35 | 42 | 4.3 | 15.0 | 46.43 | 66.3 | 21.6 | 44.7 | .337 | 58 | 2.742 | N. 28° 48′ W., 265 |
| November . . . | 29.883 | 30.473 | 29.117 | 1.356 | .181 | 45.86 | 78 | 19 | 59 | 7.1 | 16.9 | 34.99 | 73.8 | 5.2 | 68.6 | .240 | 53 | 1.575 | S. 68° 30′ W., 310 |
| December . . . | 29.899 | 30.406 | 29.266 | 1.140 | .205 | 41.03 | 64 | 19 | 45 | 5.7 | 13.4 | 31.19 | 52.2 | 13.2 | 39.0 | .184 | 60 | 5.503 | N. 58° 0′ W., 233 |
| Annual means . | 29.837 | 30.638 | 29.012 | 1.626 | .156 | 53.48 | 94 | —5½ | 99½ | 5.5 | 14.9 | 43.14 | 74.3 | —5.3 | 79.6 | .335 | 57 | 48.448 | S. 86° 25′ W., 216 |
| Winter . . . . | 29.952 | 30.678 | 29.100 | 1.578 | .208 | 30.32 | 68 | —5½ | 73½ | 7.7 | 12.5 | 24.70 | 61.9 | —5.3 | 67.2 | .160 | 66 | 7.529 | N. 81° 29′ W., 367 |
| Spring . . . . | 29.773 | 30.304 | 29.163 | 1.141 | .177 | 48.30 | 86½ | 9 | 77½ | 5.7 | 15.5 | 36.82 | 63.5 | 10.9 | 52.6 | .240 | 54 | 14.748 | S. 77° 25′ W., 255 |
| Summer . . . . | 29.761 | 30.071 | 29.182 | .889 | .093 | 74.58 | 94 | 50 | 44 | 3.4 | 14.7 | 62.46 | 74.2 | 43.8 | 30.5 | .576 | 57 | 18.838 | S. 46° 58′ W., 172 |
| Autumn . . . . | 29.883 | 30.473 | 29.012 | 1.461 | .150 | 57.07 | 87 | 19 | 68 | 5.3 | 16.5 | 45.59 | 73.8 | 5.2 | 68.6 | .346 | 54 | 5.449 | N. 75° 58′ W., 192 |
| For six years . . | 29.884 | 30.709 | 28.895 | 1.814 | .153 | 53.67 | 100½ | —5½ | 106 | 5.6 | . . | 44.58 | 78.5 | —5.9 | 84.4 | .345 | 59 | 43.502 | N. 75° 12′ W., 223 |

The whole number of deaths for the year (Table I.) in the consolidated city, embracing the entire county, from all sections of which returns are made to the health office, were 10,895. Compared with the deaths for 1856, as shown in our last report to the College, amounting to 12,334, there is a difference of 1,439, equal to 6.19 per cent. in favour of 1857.

Estimating our population to be 575,000, an increase less than 4 per cent. for the year, and which, by some statisticians, will be thought quite too low—the rate of mortality has been as one to every 52 of the entire population, and to every thousand, as one in 18½. These rates exceed the natural standard of mortality assumed by statisticians for cities, that is, 2 per cent., or as one death to every fifty of the inhabitants. It is well known, however, that the ratio of mortality is much greater in large cities.

The above estimate for 1857 is one of unusual occurrence, and marks an almost unexampled state of health during the year. For a series of years the calculation will present a less favourable result.

In the five years, from 1850 to 1854 inclusive, the average ratio was as one to every 45 of the population, or 22 in every thousand, which result will be found a more favourable rate for a series of late years than in any other city, with the exception of Charleston, S. C., where for eight years, up to 1849, the average of deaths to population was as 1 in every 52.

The following table will show the comparative mortality of four of our large Atlantic cities for 1857:—

1857.

| Cities. | Population. | Deaths. | Per ct. of deaths to pop. | To the pop. one in every | To every 1000 of the pop. |
|---|---|---|---|---|---|
| Boston . . | 170,000 | 3,958 | 2.32 | 42 | 23 |
| New York . . | 720,000 | 23,370 | 3.24 | 41 | 32 |
| Philadelphia . | 575,000 | 10,895 | 1.89 | 52 | 18 |
| Baltimore . . | 235,000 | 5,120 | 2.17 | 45 | 21 |

This statistical index to the comparative health of the cities named, confirms what we have already said of the uncommon health of our city for the past year, and substantiates our assertions elsewhere, that in comparison with other large cities we are decidedly the healthiest.

In every analytical shape it reveals the fact of our superiority in this particular relation. Contrasted with New York, the disparity is too obvious to be misunderstood. The difference in the population of the two cities when compared with the variation in the deaths forms a striking feature in the calculation.

While the estimated population of New York city is greater by 145,000, or 11 per cent., than that of Philadelphia, the deaths in the former were more by 12,475, or 36 per cent., than those in our own city.

The death rate to population presents a like favourable comparison. While in New York it stood 1 in 41, Boston 42, and Baltimore 45; in Philadelphia it was 1 in 52, a gain of 1 in every 8 over the average proportion of the other cities.

The deaths for each quarter averaged 2,723; for each month 908; for every week 209; for each day 29½, and for every hour throughout the year 1⅕th.

A marked difference, however, exists in the rates of death for the four quarters. In the third it amounted to 3,269, equal to 18 per cent. over those for the fourth quarter, which stood 2,186. In the first quarter they were 3,042, exceeding those for the second by 11 per cent. The cause or causes for these variations in the different seasons will be found in the fact, independently of all general predisposing or exciting causes, either internal or external, that the deaths in the first and third quarters were materially enhanced by the prevalence of scarlet fever in the former, and cholera infantum in the latter.

The aggregate ages of those who died during the year reached to 221,327 years. This will make the average duration of life 20.31 years for each individual. In Boston, the average for 1855 was 19.88, but for the entire State of Massachusetts it was equivalent to 27.43 years. These calculations serve as approximate evidence towards the truth of a favourite theory, that the duration of life is shorter in cities than in country districts. They also aid in establishing the opinion advanced by statisticians that the duration of life in cities, instead of increasing, is on the decline. In our own city, for instance, from 1810 to 1820, the estimate fixed it at 26.25 years, and from 1840 to 1844 it was reduced to 22.01 years, and from that period to the present it has been annually lessening. A similar result will be found to apply to New York and Boston. In England, it is also affirmed that, in the application of the principle to the population of large towns, there is a decline of their vital energies, their powers of endurance being less, and as a consequence the average duration of life is diminished.

This early waste of life, as it applies to our own city and to other large cities in this country, will be found to depend in a great measure upon the alarming sacrifice of human life in infancy, a reprehensible immolation growing out of the distribution of evils in every community that are not only preventable, but at the same time are culpably neglected.

In this city, for the last five years, the mortality in children under five years of age will average 47 per cent. of all the deaths. In New York it is still more frightful. For fifty years the average deaths under five years have been equal to 50 per cent. of the mortality. And if for fifty years, how much more deplorable within the last few years, when in a single year, according to their own statement, "in 1853, the excess over one-half the entire number of interments of all ages in the city reached to thousands." From the City Inspectors' report for 1854, '55, and '56, it appears that 58.83 per cent. of the mortality was in infants under five years of age.

During the past year, in our own city, 48 per cent. of the deaths, or 1 in every 2 and a fractional part that died, were under 5 years. Nor would it be an exaggerated calculation, to so harrowing an extent have the causes for mortality in early infancy increased, if we should estimate that more than a moiety of those born in cities are hurried out of existence, perishing prematurely before their tenth birthday, the victims of a common neglect of the laws of health.

> "An unripe harvest for the scythe of death."

Of 10,000 living children born in England, only 8,461 are alive at the end of the year; and of 1,000, there remained alive at the end of ten years 534. Facts like these, a counterpart of which may be found to exist in the large cities of the United States, where, as it is well known, the duration of life is greater by 3½ per cent. than in those of Europe, make a forcible appeal to the sympathies as well as to the intelligence of every physician and philanthropist, and are arguments of the necessity for an improvement in the sanitary condition of our city. Blessed as we are with health, in comparison with some other cities, an examination of our mortuary record still fastens the conviction, of the unmistakable existence of pernicious causes for the early work of death, that are removable, and may be reached through the enforcement of a sound sanitary police. Having pointed to the inevitable necessity for such a reform, we might inquire, and it is pertinent to the subject, why have not these salutary measures been enforced? and where lies the fault? The intelligent and observing physician comes into daily contact with these evils; he analyzes them; he traces them to their various sources; he points them out to those who have the rule of the municipality; he teaches the doctrinal truth, that they are susceptible of amelioration, and in some instances of entire removal, by proper sanitary precautions that are within the control of human authority; but his voice is hushed, in the demand for legislation far inferior to that of health and life, exalted happiness and prosperity; and he mourns over the indifference with which his toilsome investigations and his wholesome and humane suggestions are received, or at the ridicule and contempt thrown upon his statements, and thus terminates too frequently his laudable efforts. These injurious influences not being alleviated are annually increasing, because the civil authorities, either from ignorance, or an unwillingness to consider sanitary legislation essential to the political interests of the State, close their eyes upon the adoption of those measures of sanitary reform, which would diffuse the blessings of health throughout the entire community.

A more correct estimate of the health of our city may, perhaps, be obtained by confining the calculations to deaths reported from actual disease. For this purpose, it will be required to exclude those recorded under the following heads:—

| | | | |
|---|---|---|---|
| Casualties | 118 | Debility | 378 |
| Burns and scalds | 37 | Fracture | 20 |
| Concussion of brain | 7 | Malformation | 10 |
| Exposure | 5 | Old age | 195 |
| Drowned | 134 | Stillborn | 557 |
| Poison | 2 | Unknown | 291 |
| Strangulation | 1 | Wounds | 1 |
| Suffocation | 9 | Heat | 1 |
| Suicide | 26 | Exhaustion | 6 |
| Violence | 8 | | |
| From the country | 75 | Total | 1,881 |

Deducting this number from the total mortality (10,895), and we shall have left 9,014 deaths from certified diseases, showing that the mortality from accidental and other causes, besides disease, amounted to 17 per cent.

Taking the above total as the true standard, we have only 1 death in every 63 of the population, or 16 in every thousand.

Table II. enumerates the deaths occasioned by those diseases peculiar to the lungs and air-passages. They number 2,961, higher in proportion than those for 1856 by 2.42 per cent., and are equivalent to 28.13 per cent. of the mortality for the year, exclusive of stillborn.

The deaths from hooping-cough are appended to this table; they have been few in number, only 51, a decline of 26 since 1856. The deaths from inflammation of the lungs have increased 14 per cent. and congestion of the lungs 15 per cent. over those for the previous year, while inflammation of the bronchi have lessened 16 per cent., and croup 2 per cent.

This variation does not necessarily indicate less disease, but is rather an evidence that the spongy tissue of the lungs has been more liable to fatal attacks of inflammation than the lining membrane of the tracheal or bronchial passages.

Thirty-three deaths, however, are assigned to catarrh and nine to influenza; the former of these should have been with more propriety charged to bronchial inflammation. The latter may have been sporadic cases of influenza, and are, perhaps, deserving of a distinct notice.

While the ordinary inflammations of the air-passages, as coryza, catarrh, or bronchitis, have been unusually prevalent in a mild form during the last fall and first winter months, we have not been advised of the appearance of influenza in an epidemic shape; hence the deaths referred to may have been only the usual catarrhal inflammations in an aggravated form.

The deaths from croup amount to 256, or 8 per cent. of the mortality from affections of the respiratory organs, and represent a large proportion of the deaths from diseases in children between the ages of one and ten years, equal to 8.91 per cent.

Consumption of the lungs, inflammation, congestion and disease of the lungs make up 75 per cent. of the deaths from diseases of the lungs and respiratory passages.

In the table (III.) we have prepared in a separate form the annual mortality from consumption of the lungs, designating the sexes and showing the proportion of deaths for each decennial period.

The various points of interest in the character of this fatal scourge to the medical historian; its etiology, nature, pathology and treatment, but especially in all that refers to its mortality statistics from year to year in this locality, render it in our judgment deserving of a more particular notice.

No one disease on record in modern times and under ordinary circumstances, sweeps off as many of the human family as pulmonary consumption. The deaths in this city alone, for the last thirty years, have reached the enormous sum of 24,734; and, according to the statistics of other large cities north of us on the Atlantic slope, we are more highly favoured than either of them, in point of locality, for consumptive patients; while, for nearly one-third of the present century, every day on an average has chronicled 2,258 victims for the grave from this fruitful source of death. And its insidious, though certain work, is still progressing.

During the last year, 1857, the deaths were 1,544, showing an increase of 1.40 per cent. over those for 1856, and reaching a higher point than those of any former year on record by 9.40 per cent.

More than half, or 52.14 per cent., of all the deaths from diseases of the lungs and respiratory passages were from consumption.

Towards the annual mortality from all causes it contributed 14.17 per cent., an increase of nearly 2 per cent. over 1856.

The ratio of deaths to the population was as 1 in every 372.40, and 1 in 2.68 to each thousand.

From every period of life, even within the first year of infancy up to old age, it claims its subjects. The highest mortality in any one decennial period, between 20 and 30, reached 458; the next highest, between 30 and 40, was 350. These rates correspond with the statistics of other cities, and with the observations of writers generally, as to the influence of certain periods of life upon the fatality of consumption.

The first five years of infantile life chronicles 108 deaths from this disease, and had we a more particular pathological system of certifying as to the causes of death, this number would in all probability be increased, from the numerous deaths in children that are now assigned to marasmus and debility.

December furnishes the highest number of deaths from consumption, viz., 172, and April the next highest, 165. The lowest number, 103, is assigned to November, and the next minority, 105, to May.

In our former annual statistics, the deaths in females exceeded those in males by a sensible percentage. In these, however, they are nearly equal, the males 768, the females 776, a difference of eight only in favour of the females.

Herewith we append a table of the statistics of consumption for the last six years, in continuation of Dr. Condie's table, calculated for a period of twenty-six years, and published in the summary of the *Transactions* of the College (N. S., vol. i. p. 261). We have constructed this table upon a similar basis; that is, making the calculations upon the absolute deaths from disease instead of the aggregate mortality.

The results of the computation by this method will not be found so favourable, during the past six years, for the decrease of consumption in our city, as the tables of Dr. Condie show for an earlier series of years. Nor will they present the same favourable estimates as if calculated upon the total of deaths; which plan we have adopted elsewhere, and is the one we believe usually pursued by other statisticians in preparing their tables of mortality. The former system, however, furnishes the fairest indication of the truth, and as it is a subject of too much importance to be examined carelessly, and glossed over, we should approach it with strict impartiality in order to secure unbiased facts.

It will be seen that we have introduced several additional columns, one for the population of each year, another for the percentage of deaths from consumption to the annual aggregate mortality, as well as the proportionate number to the total of deaths, that the difference annually may be more readily compared.

| Population. | Years. | Total of deaths. | Deaths from external causes, old age, still-born. | Absolute deaths from disease. | Deaths from consumption. | Per cent. of deaths from do. to absolute. | Proportion of deaths from do. to absolute. | Per cent. of deaths to aggregate mortality. | Proportion to aggregate mortality. |
|---|---|---|---|---|---|---|---|---|---|
| 409,000 | 1852 | 10,155 | 1532 | 8,623 | 1182 | 13.70 | 1 in 7.29 | 11.63 | 1 in 8.58 |
| 415,000 | 1853 | 9,711 | 1615 | 8,096 | 1246 | 15.39 | 1 in 6.41 | 12.82 | 1 in 7.79 |
| 450,000 | 1854 | 11,815 | 1856 | 9,959 | 1378 | 13.85 | 1 in 7.22 | 11.66 | 1 in 8.50 |
| 525,000 | 1855 | 10,457 | 1895 | 8,562 | 1327 | 15.49 | 1 in 6.45 | 12.68 | 1 in 7.88 |
| 550,000 | 1856 | 12,334 | 2067 | 10,267 | 1501 | 14.61 | 1 in 6.83 | 12.16 | 1 in 8.21 |
| 575,000 | 1857 | 10,895 | 1881 | 9,014 | 1544 | 17.12 | 1 in 5.83 | 14.17 | 1 in 7.05 |
| Increase.<br>166,000 | | | | | | | | | |
| Per cent.<br>10.869 | | | | | | | | | |
| Average | | 10,892 | 1807 | 9,086 | 1363 | 15.02 | 1 in 6.67 | 12.52 | 1 in 8 |
| Per cent. | | | | 1.864 | increase<br>13.27 | | | | |

By the act of consolidation, our population, as seen by the table, was greatly increased in 1854. An extensive suburban territory, embracing the entire county, with its several districts, was engrafted upon our city; from this increase the mortuary returns were also gathered and computed. This addition of population, amounting to more than 25,000, would very naturally enlarge the mortality record. We find that during the period of six years, embraced in the table, there was an increase of 166,000 inhabitants, equal to 10.869 per cent.; but the total of deaths from all causes was not materially increased, while the deaths from consumption increased 13.27 per cent.

In 1852, the deaths from consumption to population stood 1 in every 337.56, whereas in 1857 they were 1 in 372.40, making a gain of 1 in every 34.84 in favour of the decrease of consumption in its ratio to population, notwithstanding in 1857 they stood nearly two per cent. higher than in 1856. But we cannot say as much for their ratio to deaths from disease. The average percentage of deaths from consumption to deaths from absolute disease, from 1852 to '57 inclusive, was 15.02 per cent., or 1 in every 6.67; the deaths averaging 9,086. Now, for the six years preceding this period, or from 1846 to 1851 inclusive, according to Dr. Condie's table, while the deaths from absolute disease averaged 7,254, the percentage of deaths from consumption was 12.60, or 1 in every 8.03 deaths.

Thus it will be perceived that the deaths from consumption have actually increased, in the last six years, 2.42 per cent. over those for the six years preceding. We cannot, therefore, congratulate ourselves that the deaths from consumption are undergoing any favourable change; and, indeed, the results of our comparative table would seem, in some measure, to verify the prediction of the President of this College, at its meeting in January, 1851, in reference to the falling off of the mortality from consumption in 1850. At that period, cod-liver oil was extensively used, and he remarked that its acknowledged effect might only postpone the fatal result, and "consequently the diminution in the deaths from consumption the past year, 1850, be made up in an increased mortality from this source, exhibited in the mortuary tables of some later period."[1]

The deaths in 1857 have been 9.40 per cent. higher than in any former year on record.

In the table (IV.) will be found the deaths from those diseases belonging to the functions and organs of the nervous system. These number 1,792, thus contributing 17.33 per cent. of the yearly mortality. A large proportion of the deaths will be found in children; convulsions and inflammation, congestion and dropsy of the brain—diseases peculiar to infantile life—contribute 1,236, equivalent to 68.97 per cent. of the whole number. To convulsions alone is charged a heavy percentage. This is one of those diseases prominently destructive of life in infancy; the deaths amounted to 556, of which 522 were in children. The first and third quarters of the year bear the heaviest proportions, viz., 141 in the first and 188 in the third. Among the latter, were many, in all probability, that owed their origin to cholera infantum, and, with a correct system of registration, would have been found under that name.

We are of opinion that the term convulsions, as found in our mortuary tables, is by far too frequently made the scape-goat for the sins of other agents in the destruction of infantile life. The term is quite too vague to be relied upon as an idiopathic disease. Very many of the deaths in the record assigned to convulsions we believe to have been the result of dentition, cholera infantum, indigestion, worms, or some pre-existing lesion, the eclampsia constituting a symptom only of the effect of irritation, transmitted to the brain or spinal marrow, instead of an isolated attack of either of those organs; charging to the effect, that which rightfully belonged to the cause.

The diseases of the organs of nutrition furnished 2,236 deaths to make up the total mortality for the year, as will be found in table (V.). This gives 21.62 per cent. of the deaths, exclusive of stillborn.

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[1] Transac. College Phys., vol. i., N. S., p. 258.

The deaths from cholera infantum, marasmus, inflammation of the stomach and bowels, dropsy, diarrhœa, and dysentery, amount to 1,895, or 84 per cent. of the whole number.

Cholera infantum, a disease peculiar to large cities, and confined chiefly to the three summer months, or more properly to the third quarter of the year, contributed 534 deaths, less by 139, or 11.51 per cent., than the average deaths from the same cause for the three preceding years. Last year they stood 6 per cent. to the entire mortality; this year but 5 per cent. On the other hand, marasmus, which in many instances, as registered, is the sequelæ of other diseases, has the credit of giving 506 deaths, which is 155, or 17.03 per cent. more than the average for the seven previous years.

The deaths in this table, from those diseases belonging to the zymotic class, the causes for which are looked upon by the sanitarian as preventable, are equal to 38.63 per cent.

We have again occasion to allude to the marked disproportion of the deaths from dropsy to those in former years. They here rate 239, even higher than the previous year (1856), and more than double those for 1854 and '5 combined. The prevalence of scarlet fever during the first quarter of the year may, to some extent, explain the cause, as a large proportion was in children, and the heaviest mortality is represented in the first quarter.

The large mortality from this class of diseases during the third quarter of the year, will not escape notice. They reached 1,198, or more by 160 than the three remaining quarters united, exceeding 53 per cent. of the total. This high rate of mortality will be found to have prevailed for a series of years, must be attributed to the influence of the season upon health, is charged principally to the several bowel complaints, fall heavily upon the younger portion of the population, and is due to those diseases included in the class "zymotic."

The deaths from diseases of the utero-genital organs will be found in table (VI.). They amount to 126; falling below those of the previous year 12.19 per cent. Seventy-seven of these deaths, or 61 per cent., were occasioned by disease of the uterus; those from other causes were trifling.

Puerperal fever rates 49; less than in 1856 by nearly 17 per cent. The highest proportion of this mortality, viz., 33, occurred in the first quarter, or during the coldest period of the year. In the last quarter, when the season was mild, there is but one death recorded.

The mortality from fevers claims a separate table (VII.), in which we have registered the deaths for the year, amounting to 1,048, or 10.13 per cent. of the entire mortality, exclusive of stillborn. This estimate is 2 per cent. less than that for 1856, when the deaths to the entire mortality were 12 per cent.

These returns have been increased nearly two-thirds by the deaths from scarlet fever, which amounted to 704, or 66.22 per cent.

The opening year was commemorated by the continued prevalence of this fatal enemy to children, scarlet fever, which had raged so fearfully during 1856. It seemed unexhausted, and persisted in its depredations upon our infant population until about the close of April, when, having gone through all its phases, it gave evidence of abatement, and by the close of the second quarter, June, its epidemic influence had almost entirely disappeared. From that period, however, until the close of the year, cases were still occurring, many of which were fatal, and to such a degree, as to increase the rate of mortality in children, as shown by the record.

During the last two years of its existence in the city, it has swept off 1,696 of our infant population, which was equivalent to 12.93 per cent. of all the deaths under 15 years, exclusive of stillborn. This mortality, and the lengthened period of the existence of the epidemic, justifies us in the conclusion that it has never been exceeded in this city for violence, extent, or duration by any former epidemic of scarlet fever. Relying upon the estimate of Dr. Tweedie, that 6 per cent. is the medium of deaths to cases, there could not have been less than 28,226 cases of the disease within our city during the two years of its prevalence.

The deaths from typhoid and typhus fevers have conjointly fallen off 13.23 per cent. since 1856. Nor have these fevers prevailed in as severe forms as in previous years. Assuming a milder type, they have yielded more readily to treatment. There are two deaths recorded from enteric fever, two from continued and nine from nervous fever, all of which should have been classed with typhoid fever according to the nomenclature of Dr. Wood.

Measles contributed 66 deaths for the year, as seen in table (VIII.); less by one-half than the previous year. On a former occasion we alluded to the alternate elevation and depression of the deaths from measles from year to year since 1850. Upon further examination, we find a somewhat similar oscillation in alternate years since 1840. In only two years of this period, embracing 18 years, did they rise above 100. In 1841, they were 119, and in 1856, 141, the maximum mortality. The minimum was 1, in 1843.

The highest rate of mortality for 1857 was, in the first or winter quarter, 53, when it fell suddenly to 11 in the second quarter; and in the third quarter it fell still lower, to 2. The fourth quarter registered none.

The winter and spring furnished the greatest amount of mortality, and this rate agrees with all other statistics.

In the next group, table (IX.), will be found the mortality from those causes which have proved most fatal during the year. Ninety being fixed as the minimum number.

The fluctuations in this table compared with the deaths in 1856, in the second column, show a favourable result for the year. Of the thirty-three causes named, 21 have fallen below those for 1856 in numbers, while the remainder, 11, have increased.

Consumption of the lungs, the great destroyer of life, supplies the maximum mortality in the list, and stands 37 per cent. above the next highest, scarlet fever, which rates 704. Stillborn 557, and convulsions 556, occupy the third position in the scale, followed closely by cholera infantum 534, while marasmus 506, and inflammation of the lungs 504, conclude the list of causes for death above five hundred.

The deaths from "diseases of the heart," a very general term, embracing both functional and organic derangement, present a considerable increase over those of 1856, or any former year, equal in this case when compared with the previous table to 10 per cent. The deaths from "drowned" also exhibit an increase of 11 per cent.

Table X. furnishes a numerical analysis of the deaths for the year. Exhibits the monthly mortality and the stillborn, with the sexes in both cases; also the number of deaths at fifteen distinct periods of life with the percentages calculated for each to the total of deaths, exclusive of stillborn.

Of the entire mortality there were 5,873 males, and 5,022 females, bearing the proportion of 53.91 per cent. of the former to 46.09 per cent. of the latter, an excess of 7.82 per cent. of the males. In the preceding year, 1856, the excess was only 3.11 per cent.

The premature and stillborn deaths amounted to 557, or 5.11 per cent. of the mortality, which is a more favourable estimate than the average for the seven previous years, which gives 5.21 per cent. The highest mortality of premature and stillborn children was, in September, 65. The lowest, 36, was in May. The excess of stillborn children was in males, and was greater than in any former year, amounting to 123 or 22.08 per cent.

From this table we also learn that the deaths under one year, exclusive of stillborn, were 2,590, or 25.05 per cent., that up to five years they amounted to 48.05 per cent. Between five and fifteen only 6.54 per cent.; from fifteen to forty 22.13 per cent., from which decennial period there is a gradual diminution of the rates.

By this analysis it will be observed that the mortality was highest in children under one year of age, amounting to more than 50 per cent. of all the deaths within the first half decade of life, or five years. In adult life that decade between 20 and 30 years shows the greatest percentage of deaths of any other, amounting to 9.72 per cent.

The heaviest monthly mortality occurred in July, 1,162; of which 52.66 per cent. was under five years; the next highest was in August, 1,146, of which, also, 58.17 per cent. was under five, a higher infant mortality by 5.51 per cent. than in July. January gave 1,140 deaths, and of these 49.64 per cent. were under five years, an unusually large percentage of infant mortality occasioned by the deaths from scarlet fever, which amounted to 18.34 per cent. of the monthly mortality. June contributed the lowest rate of deaths, 635, and November the next, 651.

Viewing the returns of mortality with special reference to the different seasons of the year, they indicate that the two summer months, July and August, and the second winter month, December, with the spring month, April, have been most fatal to human life. The most favourable to life have been May, June, October, and November.

It has been so frequently remarked that the value of vital statistics depends upon their accuracy, that the opinion has ripened into a sanitary aphorism. The radical defects of our present imperfect system, and the scanty resources for procuring correct information, debar us the full advantage of this wholesome truth.

In the absence of a registration act, which would apply to the entire State, we never can have the vital statistics of Pennsylvania. Even the fragmentary statistics of births and deaths, which apply exclusively to our own city, are so imperfectly furnished, that they are, at the best, only an approximation to accuracy, not to mention the very meagre character of the tabular form required to be registered.

Every one interested in the collection and preservation of vital statistics, as well as those who can appreciate their value, must regret that we are not living under the guidance of a more complete and enlightened code of laws, both registration and sanitary, applicable to the prevention of disease and the prolongation of life, or that those we already possess are not more zealously administered.

As far as the general health law of 1818 applies to our city we have no serious complaint to offer. It contains ample provision for sanitary protection from both foreign and local sources of disease, if the conditions were strictly carried out. But it is to the indefinite manner in which this law is enforced that in common with others we make exception. This laxity is either the result of ignorance, or an erroneous view of the responsible duties imposed upon those to whom is confided the sanitary protection of the citizens, as well as the improvement of the public health.

A change in this department of our city government is as necessary as a registration act for the State. Both are imperiously demanded. The former as the application of recent events has made singularly clear to the public mind, needs revision. Like that of a neighbouring city, it has become so tarnished, so perverted, that it is "a by-word and reproach among all classes of citizens." The alone cause for this degeneracy is the too frequent practice of mingling science and humanity with politics, and of conferring responsible places "merely as the rewards of party service to men no way qualified by habits of observation and study for the positions they occupy." (*Newman's Reports San. Police of Cities*, p. 44.)

The importance of the latter, a general registration act, we have on former occasions commended, and shall continue to make it one of the cherished objects of our public offerings, until we secure for it the fostering care of the State. In our estimation it possesses claims for the benefit of legislative favour that far outweigh those numerous interests that are ever receiving the consideration and patronage of government. Its value to the prosperity of the State cannot be computed. As a source of happiness to the people it knows no equal; and as a measure for the improvement of health and the prolongation of life, the experience of other countries guarantees its value.

The mission of the intelligent physician is not confined alone to the cure of disease. The preservation of health, and the improvement of our race, lay claim to a large share of his professional labours; hence we regard it as a principle incontrovertible, that the true aim of the medical man, his highest, noblest, most exalted, and truly philanthropic vocation, is to avert those evils, both sanitary and moral, physical and mental, within reach of science, that are destructive to health and dangerous to life; and in this extended field, where the morbid seeds of sickness are sown broadcast, claim his victory over disease, and his triumph over death.

Entertaining these views, we would, in conclusion, most earnestly invite the attention of the College to another trial of their faith, and in an associated effort with the State Medical Society, endeavour to secure the enactment of a well-defined and generally approved law, for a State registration of births, marriages, and deaths.

TABLE I.—*Mortality for the year* 1857, *Collated from*

| DISEASES. | FIRST QUARTER, COMMENCING JANUARY 3, 1857. | | | | | | | | | SECOND COMMENCING | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jan. | | Feb. | | March. | | Adults. | Minors. | Total. | April. | | May. | | June. | |
| | M. | F. | M. | F. | M. | F. | | | | M. | F. | M. | F. | M. | F. |
| Abscess | .. | 3 | .. | 1 | 1 | 2 | 7 | .. | 7 | 5 | .. | 2 | 2 | 2 | 2 |
| “ liver | .. | .. | .. | .. | 1 | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. |
| Albuminuria | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 | 2 | .. | 1 | .. | 1 | .. |
| Anæmia | 2 | .. | 1 | 1 | 1 | .. | 2 | 3 | 5 | .. | .. | .. | .. | .. | .. |
| Anasarca | .. | .. | .. | .. | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. |
| Aneurism | 1 | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | 2 | .. |
| “ of the aorta | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. |
| Angina pectoris | 1 | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. |
| Apoplexy | 6 | 3 | 5 | 6 | 7 | 5 | 29 | 3 | 32 | 10 | 8 | 5 | 1 | 5 | 4 |
| Asphyxia | 4 | 1 | .. | 3 | 1 | .. | 1 | 8 | 9 | 1 | .. | .. | 1 | 1 | .. |
| Asthma | 1 | 3 | 3 | .. | 2 | 2 | 7 | 4 | 11 | .. | 3 | .. | .. | 1 | .. |
| Cachexia | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. |
| Cancer and scirrhus | 1 | 6 | 3 | 5 | 5 | 9 | 27 | 2 | 29 | 1 | 7 | 2 | 3 | 3 | 6 |
| “ of the stomach and bowels | 2 | .. | 2 | 1 | .. | .. | 4 | 1 | 5 | 1 | .. | .. | .. | .. | .. |
| “ “ liver | .. | .. | .. | .. | .. | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. |
| “ “ uterus | .. | 1 | .. | 2 | .. | .. | 3 | .. | 3 | .. | .. | .. | .. | .. | .. |
| Cancrum oris | 3 | 2 | .. | .. | .. | 3 | .. | 8 | 8 | .. | 1 | .. | .. | .. | .. |
| Caries | 1 | .. | .. | .. | .. | 1 | 1 | 1 | 2 | .. | .. | .. | .. | 1 | .. |
| “ of the spine | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Carbuncle | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Catarrh | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Casualties | 4 | 1 | 6 | 2 | 6 | 2 | 16 | 5 | 21 | 5 | .. | 5 | 2 | 6 | 1 |
| Burns and scalds | 2 | 2 | 2 | 1 | 4 | 3 | 9 | 5 | 14 | 5 | .. | 3 | .. | .. | 1 |
| Drowned | .. | .. | .. | .. | 3 | .. | 2 | 1 | 3 | 6 | .. | 11 | .. | 23 | 4 |
| Exposure | 1 | .. | .. | 1 | 1 | 1 | 3 | 1 | 4 | .. | .. | .. | .. | .. | .. |
| Fracture | .. | .. | 1 | .. | 1 | .. | 2 | .. | 2 | .. | .. | .. | .. | .. | .. |
| “ of leg | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| “ pelvis | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. |
| “ skull | 2 | .. | 1 | 1 | .. | .. | 2 | 2 | 4 | .. | .. | .. | .. | .. | .. |
| “ spine | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Neglect | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Poisoning | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 |
| Strangulation | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. |
| Suicide | 1 | .. | 1 | 1 | .. | 1 | 4 | .. | 4 | 3 | 1 | 3 | 2 | .. | .. |
| Suffocation | .. | .. | 1 | 1 | 2 | .. | .. | 4 | 4 | .. | 1 | .. | .. | .. | 3 |
| Violence | 2 | .. | 1 | .. | 1 | .. | 4 | .. | 4 | 2 | .. | .. | .. | .. | 1 |
| Cholera asphyxia | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. |
| “ infantum | 1 | .. | 1 | .. | .. | .. | .. | 2 | 2 | .. | 1 | .. | 1 | 3 | 5 |
| “ morbus | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Chorea | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. |
| Chlorosis | .. | .. | .. | 1 | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. |
| Cirrhosis | .. | .. | .. | .. | 1 | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. |
| Childbed | .. | .. | .. | 1 | .. | 1 | 2 | .. | 2 | .. | .. | .. | .. | .. | .. |
| Colic | .. | 1 | .. | .. | 2 | .. | 2 | 1 | 3 | .. | 1 | .. | 1 | .. | .. |
| Coma | 1 | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. |
| Concussion of the brain | 2 | .. | 2 | .. | .. | .. | 3 | 1 | 4 | 1 | .. | .. | .. | 2 | .. |
| Congestion | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. |
| “ of the brain | 13 | 9 | 9 | 9 | 14 | 5 | 25 | 34 | 59 | 13 | 4 | 7 | 3 | 11 | 6 |
| “ “ liver | .. | 1 | 1 | .. | 1 | .. | 2 | 1 | 3 | .. | .. | .. | .. | .. | .. |
| “ “ lungs | 2 | 4 | 4 | 6 | 6 | 7 | 8 | 21 | 29 | 10 | 8 | 5 | 3 | 1 | 2 |
| “ “ stomach and bowels | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. |
| Consumption of bowels | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| “ lungs | 59 | 68 | 63 | 66 | 76 | 75 | 327 | 80 | 407 | 89 | 76 | 50 | 55 | 40 | 49 |
| Convulsions | 30 | 23 | 29 | 20 | 19 | 20 | 6 | 135 | 141 | 34 | 24 | 17 | 17 | 14 | 15 |
| “ puerperal | .. | 1 | 1 | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. |
| Cramp | 1 | 1 | 1 | 1 | .. | .. | 1 | 3 | 4 | .. | 1 | .. | .. | .. | .. |
| Croup | 20 | 22 | 17 | 12 | 14 | 4 | 1 | 88 | 89 | 14 | 14 | 12 | 7 | 5 | 13 |
| Coryza | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Coup de soleil | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Coxalgia | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Cyanosis | 4 | 1 | 1 | .. | 1 | 1 | .. | 8 | 8 | .. | 4 | .. | 1 | 1 | 1 |
| Debility | 18 | 16 | 18 | 12 | 12 | 15 | 47 | 44 | 91 | 16 | 10 | 11 | 9 | 19 | 10 |
| Diabetes | 2 | 1 | 1 | .. | .. | .. | 3 | 1 | 4 | .. | 1 | .. | .. | .. | 1 |
| Diarrhœa | 2 | 4 | .. | 2 | 3 | 1 | 9 | 3 | 12 | 6 | 2 | 3 | .. | 3 | 4 |
| Disease of the bladder | .. | .. | .. | .. | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. |
| “ brain | 9 | 6 | 6 | 3 | 4 | 5 | 8 | 25 | 33 | 9 | 1 | .. | .. | 3 | 2 |
| “ chest | .. | .. | 2 | .. | .. | 2 | 2 | 2 | 4 | 1 | .. | .. | 1 | .. | .. |
| “ ear | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. |
| “ heart | 10 | 7 | 10 | 5 | 6 | 11 | 29 | 20 | 49 | 12 | 5 | 7 | 5 | 8 | 10 |
| “ hip | .. | .. | 1 | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | 1 | .. | .. |
| “ kidneys | 1 | 1 | 1 | .. | .. | .. | 2 | 1 | 3 | 1 | 1 | .. | .. | .. | .. |
| “ mouth | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |

*Returns made to the Health Office.* By WILSON JEWELL, M. D.

| QUARTER, MARCH 28, 1857. | | | THIRD QUARTER, COMMENCING JUNE 27, 1857. | | | | | | | | | FOURTH QUARTER, COMMENCING OCTOBER 3, 1857. | | | | | | | | | Total for the year. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adults. | Minors. | Total. | July. | | Aug. | | Sept. | | Adults. | Minors. | Total. | Oct. | | Nov. | | Dec. | | Adults. | Minors. | Total. | |
| | | | M. | F. | M. | F. | M. | F. | | | | M. | F. | M. | F. | M. | F. | | | | |
| 9 | 4 | 13 | 1 | 1 | 1 | 4 | .. | 2 | 6 | 3 | 9 | .. | 1 | .. | 1 | 1 | 3 | 4 | 2 | 6 | 35 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 4 | .. | 4 | 1 | .. | .. | 1 | .. | .. | 2 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 7 |
| .. | .. | .. | 2 | 1 | 1 | 1 | .. | .. | 3 | 2 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 10 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 1 | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 26 | 7 | 33 | 6 | 2 | 5 | 2 | 9 | 2 | 26 | .. | 26 | 2 | 5 | 2 | 3 | 6 | 6 | 23 | 1 | 24 | 115 |
| .. | 3 | 3 | 2 | .. | .. | .. | .. | 1 | .. | 3 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 15 |
| 3 | 1 | 4 | 1 | 1 | .. | 1 | 2 | 2 | 3 | 4 | 7 | 3 | 3 | 1 | .. | 4 | .. | 11 | .. | 11 | 33 |
| 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 20 | 2 | 22 | 3 | 6 | 3 | 5 | 3 | 11 | 26 | 5 | 31 | 2 | 8 | .. | 6 | 4 | 6 | 25 | 1 | 26 | 108 |
| 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 7 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | 1 | 4 |
| .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 9 |
| .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 |
| 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 | 4 | 4 | 1 | 10 | 11 | 1 | 32 | 33 | 33 |
| 16 | 3 | 19 | 11 | 3 | 3 | 1 | 13 | 4 | 25 | 10 | 35 | 9 | 7 | 4 | 5 | 15 | 3 | 24 | 19 | 43 | 118 |
| 3 | 6 | 9 | 1 | 2 | .. | 2 | .. | .. | .. | 5 | 5 | 1 | 1 | .. | .. | 2 | 5 | 2 | 7 | 9 | 37 |
| 24 | 20 | 44 | 23 | 2 | 19 | 2 | 20 | 4 | 43 | 27 | 70 | 3 | .. | 7 | 1 | 6 | .. | 15 | 2 | 17 | 134 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 4 |
| .. | .. | .. | .. | .. | .. | .. | 4 | .. | 3 | 1 | 4 | .. | 1 | 2 | .. | 2 | .. | 3 | 2 | 5 | 11 |
| .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| .. | .. | .. | 1 | .. | 1 | .. | .. | .. | 1 | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 6 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | 1 | 1 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | 1 | 1 |
| 2 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 |
| 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 9 | .. | 9 | 4 | .. | 1 | .. | 3 | 2 | 10 | .. | 10 | .. | .. | 2 | 1 | .. | .. | 3 | .. | 3 | 26 |
| .. | 4 | 4 | .. | 1 | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 9 |
| 3 | .. | 3 | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 8 |
| 2 | .. | 2 | 1 | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 |
| .. | 10 | 10 | 91 | 79 | 136 | 119 | 51 | 32 | .. | 508 | 508 | 6 | 3 | 4 | 1 | .. | .. | .. | 14 | 14 | 534 |
| 1 | .. | 1 | 1 | 2 | 3 | 2 | .. | 1 | 3 | 6 | 9 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 10 |
| 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 |
| .. | .. | .. | .. | 2 | .. | .. | .. | 1 | 3 | .. | 3 | .. | 1 | .. | 1 | .. | .. | 2 | .. | 2 | 7 |
| 1 | 1 | 2 | .. | .. | .. | 1 | .. | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | 1 | .. | 1 | 7 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 3 | .. | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 7 |
| .. | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 |
| 14 | 30 | 44 | 8 | 10 | 15 | 8 | 10 | 9 | 27 | 33 | 60 | 12 | 6 | 4 | 4 | 6 | 6 | 15 | 23 | 38 | 201 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 2 | .. | .. | 2 | 1 | 3 | 6 |
| 10 | 19 | 29 | 4 | 1 | 3 | 2 | 10 | 9 | 14 | 15 | 29 | 2 | 4 | 9 | 7 | 13 | 10 | 22 | 23 | 45 | 132 |
| 2 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | 1 | 3 |
| .. | .. | .. | .. | .. | .. | 2 | 1 | 1 | 2 | 2 | 4 | .. | .. | .. | .. | 1 | .. | .. | 1 | 1 | 5 |
| 302 | 57 | 359 | 72 | 68 | 56 | 61 | 70 | 59 | 294 | 92 | 386 | 65 | 52 | 46 | 57 | 82 | 90 | 326 | 66 | 392 | 1544 |
| 8 | 113 | 121 | 38 | 39 | 32 | 25 | 30 | 24 | 12 | 176 | 188 | 16 | 9 | 16 | 17 | 28 | 20 | 8 | 98 | 106 | 556 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| .. | 1 | 1 | 2 | .. | 1 | 2 | .. | .. | .. | 5 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 10 |
| 3 | 62 | 65 | 15 | 3 | 3 | 1 | 7 | 2 | .. | 31 | 31 | 11 | 8 | 15 | 11 | 16 | 10 | .. | 71 | 71 | 256 |
| .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| .. | .. | .. | 5 | .. | 1 | .. | .. | .. | 5 | 1 | 6 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 6 |
| .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| .. | 7 | 7 | 2 | 1 | 4 | .. | 1 | .. | .. | 8 | 8 | 1 | .. | 2 | 2 | 4 | 2 | .. | 11 | 11 | 34 |
| 36 | 39 | 75 | 21 | 14 | 26 | 12 | 20 | 22 | 37 | 78 | 115 | 17 | 13 | 17 | 11 | 19 | 20 | 47 | 50 | 97 | 378 |
| 2 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | 1 | 7 |
| 9 | 9 | 18 | 14 | 8 | 14 | 13 | 11 | 6 | 9 | 57 | 66 | 4 | 5 | 3 | 5 | 4 | 2 | 15 | 8 | 23 | 119 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 5 | 10 | 15 | 6 | 6 | 5 | 5 | 9 | 6 | 10 | 27 | 37 | 2 | 3 | 1 | 1 | 5 | 3 | 3 | 12 | 15 | 101 |
| .. | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 | 7 |
| .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 32 | 15 | 47 | 6 | 14 | 11 | 6 | 5 | 8 | 39 | 11 | 50 | 12 | 10 | 11 | 15 | 14 | 14 | 58 | 18 | 76 | 222 |
| 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 | 3 |
| 1 | 1 | 2 | 1 | .. | .. | 1 | .. | .. | 1 | 1 | 2 | .. | .. | 1 | .. | .. | .. | .. | 1 | 1 | 8 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | 1 | 1 |

TABLE I.—*Mortality*

| DISEASES. | FIRST QUARTER, COMMENCING JANUARY 3, 1857. | | | | | | | | | SECOND COMMENCING | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jan. | | Feb. | | March. | | Adults. | Minors. | Total. | April. | | May. | | June. | |
| | M. | F. | M. | F. | M. | F. | | | | M. | F. | M. | F. | M. | F. |
| Disease of the leg | .. | 1 | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. |
| “ liver | .. | 1 | .. | 1 | .. | 1 | 1 | 2 | 3 | 2 | .. | 1 | .. | 2 | 1 |
| “ lungs | 1 | 5 | 2 | 5 | 1 | 4 | 10 | 8 | 18 | 6 | 2 | 2 | 2 | 2 | .. |
| “ ovaries | .. | .. | .. | 1 | .. | 1 | 2 | .. | 2 | .. | .. | .. | .. | .. | .. |
| “ skin | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| “ spine | 1 | 1 | 1 | .. | .. | .. | .. | 3 | 3 | 1 | .. | .. | .. | .. | .. |
| “ stomach and bowels | 1 | .. | 1 | 1 | 2 | .. | 2 | 3 | 5 | 2 | 1 | .. | 3 | .. | .. |
| “ throat | .. | .. | 1 | .. | .. | .. | .. | 1 | 1 | 1 | .. | .. | .. | .. | .. |
| “ uterus | .. | 2 | .. | .. | .. | .. | 2 | .. | 2 | .. | .. | .. | .. | .. | .. |
| Dropsy | 16 | 15 | 18 | 10 | 8 | 9 | 35 | 41 | 76 | 12 | 10 | 11 | 9 | 5 | 10 |
| “ abdominal | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. |
| “ of the brain | 12 | 10 | 14 | 8 | 10 | 4 | 1 | 57 | 58 | 9 | 4 | 7 | 5 | 9 | 6 |
| “ “ chest | 5 | .. | 2 | 2 | 4 | 1 | 5 | 9 | 14 | 6 | .. | 5 | 3 | 1 | 4 |
| “ “ heart | .. | .. | .. | 1 | 1 | .. | 1 | 1 | 2 | .. | 1 | 3 | .. | 1 | 2 |
| “ “ liver | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Dysentery | 2 | 3 | 3 | 1 | 3 | 3 | 8 | 7 | 15 | 3 | 1 | 3 | 5 | 4 | 2 |
| Dyspepsia | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Eczema | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Effusion on the brain | 3 | 2 | 5 | 5 | 9 | 6 | 6 | 24 | 30 | 5 | 3 | 2 | 1 | 2 | .. |
| “ chest | .. | .. | 1 | .. | .. | .. | .. | 1 | 1 | 2 | .. | .. | .. | .. | .. |
| “ lungs | .. | .. | .. | .. | .. | 2 | 2 | .. | 2 | .. | .. | .. | .. | .. | .. |
| “ spinal marrow | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. |
| Enlargement of the heart | .. | .. | 1 | 2 | 4 | 3 | 6 | 4 | 10 | 4 | 2 | .. | 1 | .. | 1 |
| Emphysema | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. |
| Empyema | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. |
| Epilepsy | 2 | 3 | 2 | 2 | 2 | 4 | 7 | 8 | 15 | 1 | .. | 1 | .. | .. | .. |
| Eruptions | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Erysipelas | 10 | 5 | 3 | 6 | 8 | 3 | 22 | 13 | 35 | 6 | 9 | 4 | 2 | 2 | 5 |
| Exhaustion | 2 | .. | 1 | .. | .. | 1 | 1 | 3 | 4 | 2 | .. | .. | .. | .. | .. |
| Fever | .. | .. | .. | .. | 1 | 2 | 3 | .. | 3 | .. | .. | .. | .. | .. | .. |
| “ bilious | 1 | 1 | .. | .. | .. | .. | 2 | .. | 2 | 3 | .. | .. | .. | .. | .. |
| “ brain | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| “ congestive | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. |
| “ continued | .. | .. | 1 | .. | .. | 1 | 1 | 1 | 2 | .. | .. | .. | .. | .. | .. |
| “ enteric | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. |
| “ gastric | .. | .. | 2 | .. | .. | .. | .. | 2 | 2 | .. | .. | .. | .. | .. | 1 |
| “ hectic or inflammatory | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. |
| “ intermittent | .. | .. | 2 | .. | 1 | .. | 2 | 1 | 3 | .. | 2 | .. | .. | .. | .. |
| “ nervous | 1 | 1 | .. | 1 | .. | .. | 2 | 1 | 3 | .. | .. | .. | 1 | .. | .. |
| “ puerperal | .. | 10 | .. | 13 | .. | 10 | 27 | 6 | 33 | .. | 1 | .. | 4 | .. | 7 |
| “ remittent | .. | 2 | 2 | 1 | 1 | 1 | 4 | 3 | 7 | 1 | 3 | .. | 1 | .. | .. |
| “ scarlet | 113 | 96 | 59 | 67 | 58 | 32 | 7 | 418 | 425 | 39 | 43 | 19 | 16 | 14 | 22 |
| “ typhoid | 9 | 6 | 14 | 3 | 3 | 7 | 25 | 17 | 42 | 6 | 9 | 8 | 9 | 3 | 1 |
| “ typhus | 3 | .. | 1 | 1 | 3 | .. | 3 | 5 | 8 | 1 | 1 | 1 | 1 | .. | 1 |
| Fungus hæmatodes | 1 | .. | .. | .. | .. | 1 | 2 | .. | 2 | .. | .. | .. | .. | .. | .. |
| Gangrene | 1 | .. | .. | .. | .. | 1 | 1 | 1 | 2 | 2 | .. | 2 | 1 | .. | 1 |
| “ of lungs | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Gout | 1 | .. | .. | .. | 1 | .. | 2 | .. | 2 | .. | .. | .. | 2 | .. | .. |
| “ of the heart | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Hemorrhage | 1 | .. | 2 | 6 | 2 | 2 | 9 | 4 | 13 | 2 | 2 | .. | .. | .. | .. |
| “ from the lungs | 4 | 2 | .. | 1 | .. | 1 | 5 | 3 | 8 | 2 | 1 | 2 | .. | 2 | .. |
| “ “ stomach | 2 | .. | .. | .. | .. | .. | 1 | 1 | 2 | .. | .. | .. | .. | .. | .. |
| “ “ uterus | .. | 1 | .. | .. | .. | 1 | 2 | .. | 2 | .. | 2 | .. | .. | .. | .. |
| Hernia | 1 | .. | .. | .. | .. | .. | 1 | .. | 1 | 1 | 1 | .. | .. | .. | 1 |
| “ umbilical | .. | .. | .. | 1 | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. |
| Hooping-cough | 2 | 2 | 4 | 2 | 3 | 1 | .. | 14 | 14 | .. | 4 | 1 | 2 | 1 | 2 |
| Icterus | 1 | .. | .. | .. | .. | 3 | 2 | 2 | 4 | 1 | 2 | 2 | .. | .. | .. |
| Inanition | 3 | 7 | 4 | 2 | 2 | 5 | 5 | 18 | 23 | 5 | 1 | 5 | 3 | 3 | 2 |
| Infanticide | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. |
| Inflammation | 1 | .. | 1 | 2 | 2 | 1 | 3 | 4 | 7 | 1 | 1 | .. | .. | .. | 1 |
| “ of the abdomen | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. |
| “ “ bladder | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| “ “ brain | 10 | 10 | 14 | 12 | 8 | 17 | 4 | 67 | 71 | 15 | 8 | 16 | 7 | 3 | 13 |
| “ “ bronchi | 25 | 9 | 6 | 8 | 14 | 10 | 61 | 11 | 72 | 17 | 13 | 7 | 8 | 4 | 4 |
| “ “ chest | .. | .. | 1 | 1 | .. | 1 | 1 | 2 | 3 | 1 | .. | 2 | 2 | .. | .. |
| “ “ heart | 1 | 2 | .. | 1 | .. | .. | 4 | .. | 4 | 2 | .. | 1 | .. | .. | .. |
| “ “ hip | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. |
| “ “ kidneys | 1 | .. | 1 | .. | 1 | .. | 2 | 1 | 3 | .. | 1 | 2 | .. | .. | .. |
| “ “ larynx | 2 | 2 | .. | 1 | 2 | 3 | 8 | 2 | 10 | 2 | 1 | .. | .. | .. | .. |
| “ “ liver | 1 | 1 | 1 | 1 | .. | .. | 3 | 1 | 4 | .. | 2 | 3 | 2 | 3 | 1 |
| “ “ lungs | 36 | 34 | 34 | 28 | 24 | 19 | 56 | 119 | 175 | 34 | 43 | 25 | 15 | 11 | 7 |
| “ “ peritoneum | 1 | 5 | .. | 5 | .. | 12 | 20 | 3 | 23 | 1 | 9 | 2 | 1 | 2 | 4 |

*for* 1857—Continued.

| QUARTER, MARCH 28, 1857. | | | THIRD QUARTER, COMMENCING JUNE 27, 1857. | | | | | | | | | FOURTH QUARTER, COMMENCING OCTOBER 3, 1857. | | | | | | | | | Total for the year. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adults. | Minors. | Total. | July. | | Aug. | | Sept. | | Adults. | Minors. | Total. | Oct. | | Nov. | | Dec. | | Adults. | Minors. | Total. | |
| | | | M. | F. | M. | F. | M. | F. | | | | M. | F. | M. | F. | M. | F. | | | | |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 3 | 3 | 6 | 1 | 2 | 1 | 1 | 2 | 1 | 6 | 2 | 8 | 4 | 2 | 3 | 1 | 6 | .. | 14 | 2 | 16 | 33 |
| 8 | 6 | 14 | 2 | 1 | 1 | 1 | .. | .. | 4 | 1 | 5 | 1 | 4 | 3 | 2 | 4 | 2 | 12 | 4 | 16 | 53 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | 1 | 1 |
| 1 | .. | 1 | 1 | .. | 1 | 1 | 1 | .. | .. | 4 | 4 | 1 | .. | .. | .. | .. | .. | 1 | .. | 1 | 9 |
| 3 | 3 | 6 | .. | .. | .. | .. | 1 | 2 | 1 | 2 | 3 | .. | .. | .. | .. | 1 | 1 | 2 | .. | 2 | 16 |
| .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 |
| 34 | 23 | 57 | 14 | 7 | 9 | 7 | 4 | 4 | 36 | 9 | 45 | 11 | 8 | 13 | 8 | 13 | 8 | 35 | 26 | 61 | 239 |
| 2 | .. | 2 | .. | .. | .. | 2 | 1 | 1 | 4 | .. | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 6 |
| 3 | 37 | 40 | 21 | 8 | 10 | 15 | 6 | 6 | 4 | 62 | 66 | 2 | 2 | 2 | 1 | 1 | 1 | .. | 9 | 9 | 173 |
| 9 | 10 | 19 | 3 | 2 | .. | 2 | 2 | 2 | 6 | 5 | 11 | .. | .. | .. | 1 | 2 | 1 | 1 | 3 | 4 | 48 |
| 4 | 3 | 7 | 1 | .. | 3 | 5 | 1 | 1 | 7 | 4 | 11 | .. | .. | .. | 1 | .. | .. | 1 | .. | 1 | 21 |
| .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 9 | 9 | 18 | 19 | 21 | 35 | 22 | 28 | 19 | 52 | 92 | 144 | 5 | 5 | 3 | 3 | 1 | 4 | 10 | 11 | 21 | 198 |
| 1 | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 |
| .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 3 | 10 | 13 | 5 | 5 | 5 | 11 | 6 | 7 | 5 | 34 | 39 | .. | .. | 2 | 1 | 5 | 2 | 3 | 7 | 10 | 92 |
| 1 | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | 1 | 1 | 2 | 4 |
| 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 7 | 1 | 8 | 1 | 1 | .. | .. | .. | .. | 2 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 20 |
| .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 1 | 1 | 2 | 1 | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 18 |
| .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 13 | 15 | 28 | 2 | 5 | .. | 1 | 6 | 1 | 7 | 8 | 15 | 2 | 2 | 3 | 2 | 6 | 2 | 8 | 9 | 17 | 95 |
| 2 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 6 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 |
| 2 | 1 | 3 | 1 | .. | 4 | .. | 1 | 1 | 6 | 1 | 7 | 7 | 4 | .. | 1 | .. | 1 | 8 | 5 | 13 | 25 |
| .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | 1 | 1 | .. | .. | .. | .. | .. | 1 | .. | 1 | 2 |
| .. | 1 | 1 | .. | .. | .. | 1 | 2 | .. | 1 | 2 | 3 | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 | 5 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 |
| 2 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 |
| .. | 1 | 1 | .. | 1 | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 4 |
| 1 | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 |
| 1 | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 5 |
| 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 | .. | .. | 2 | .. | 4 | 1 | 5 | 9 |
| 10 | 2 | 12 | .. | .. | .. | 3 | .. | .. | 3 | .. | 3 | .. | .. | .. | .. | .. | 1 | 1 | .. | 1 | 49 |
| 2 | 3 | 5 | .. | .. | .. | .. | 3 | 1 | .. | 4 | 4 | 3 | .. | 1 | 2 | 1 | .. | 5 | 2 | 7 | 23 |
| 1 | 152 | 153 | 18 | 20 | 2 | 7 | 6 | 7 | 1 | 59 | 60 | 14 | 4 | 9 | 6 | 14 | 19 | 3 | 63 | 66 | 704 |
| 18 | 18 | 36 | 6 | 8 | 6 | 8 | 8 | 9 | 29 | 16 | 45 | 12 | 8 | 5 | 8 | 8 | 11 | 36 | 16 | 52 | 175 |
| 4 | 1 | 5 | 1 | .. | 3 | .. | 4 | 3 | 8 | 3 | 11 | .. | 1 | 1 | .. | 8 | 4 | 10 | 4 | 14 | 38 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | 1 | 3 |
| 4 | 2 | 6 | .. | .. | 1 | .. | .. | .. | .. | 1 | 1 | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 | 10 |
| 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 2 | .. | 2 | .. | .. | .. | .. | .. | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 5 |
| .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 3 | 1 | 4 | .. | 3 | 1 | 3 | 2 | 1 | 7 | 3 | 10 | 4 | 1 | 3 | 5 | 3 | .. | 13 | 3 | 16 | 43 |
| 6 | 1 | 7 | .. | .. | .. | .. | 2 | .. | 1 | 1 | 2 | .. | 1 | .. | .. | .. | .. | 1 | .. | 1 | 18 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 |
| 1 | 1 | 2 | .. | .. | .. | 1 | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 5 |
| 3 | .. | 3 | .. | 2 | 1 | .. | .. | .. | 2 | 1 | 3 | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 | 8 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| .. | 10 | 10 | 2 | .. | 5 | 3 | 1 | 2 | .. | 13 | 13 | 4 | 6 | 2 | 1 | 1 | .. | .. | 14 | 14 | 51 |
| 1 | 4 | 5 | .. | .. | .. | 2 | .. | .. | 2 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 11 |
| 2 | 17 | 19 | 7 | .. | 4 | 1 | 5 | 5 | 4 | 18 | 22 | 3 | 1 | 7 | 2 | 1 | 3 | 3 | 14 | 17 | 81 |
| .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| .. | 3 | 3 | 1 | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 11 |
| .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 1 | .. | 1 | 1 | 1 | 1 | .. | .. | .. | 3 | .. | 3 | .. | .. | .. | .. | 4 | 1 | 3 | 2 | 5 | 9 |
| 14 | 48 | 62 | 21 | 16 | 18 | 18 | 16 | 16 | 21 | 84 | 105 | 18 | 15 | 11 | 7 | 9 | 8 | 24 | 44 | 68 | 306 |
| 14 | 39 | 53 | 4 | 5 | 3 | 5 | 3 | .. | 9 | 11 | 20 | 7 | 7 | 4 | 7 | 6 | 3 | 10 | 24 | 34 | 179 |
| 1 | 4 | 5 | 1 | 2 | 2 | .. | .. | 1 | .. | 6 | 6 | 1 | .. | .. | .. | .. | 1 | .. | 2 | 2 | 16 |
| 1 | 2 | 3 | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 8 |
| .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 2 | 1 | 3 | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 7 |
| .. | 3 | 3 | .. | .. | .. | .. | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 14 |
| 6 | 5 | 11 | 1 | .. | 3 | 1 | 2 | 3 | 8 | 2 | 10 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 25 |
| 52 | 83 | 135 | 18 | 15 | 12 | 7 | 6 | 7 | 24 | 41 | 65 | 12 | 14 | 32 | 35 | 22 | 14 | 56 | 73 | 129 | 504 |
| 13 | 6 | 19 | 2 | 4 | .. | 4 | .. | .. | 6 | 4 | 10 | 1 | .. | .. | 1 | 1 | 1 | 4 | .. | 4 | 56 |

TABLE I.—*Mortality*

| DISEASES. | FIRST QUARTER, COMMENCING JANUARY 3, 1857. | | | | | | | | | SECOND COMMENCING | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jan. | | Feb. | | March. | | Adults. | Minors. | Total. | April. | | May. | | June. | |
| | M. | F. | M. | F. | M. | F. | | | | M. | F. | M. | F. | M. | F. |
| Inflammation of the pleura | .. | .. | .. | .. | .. | 1 | .. | 1 | 1 | 5 | 4 | 3 | 3 | .. | 2 |
| " " spine | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. |
| " " stomach and bowels | 11 | 10 | 14 | 12 | 12 | 11 | 32 | 38 | 70 | 16 | 11 | 4 | 10 | 15 | 9 |
| " " throat | .. | 1 | .. | 1 | .. | .. | .. | 2 | 2 | 1 | .. | .. | .. | .. | 1 |
| " " tonsils | 1 | .. | .. | 4 | .. | .. | 2 | 3 | 5 | .. | .. | .. | 1 | .. | 1 |
| " " trachea | 3 | .. | 1 | .. | .. | .. | .. | 4 | 4 | 2 | .. | 2 | 1 | .. | .. |
| " " uterus | .. | .. | .. | 2 | .. | 3 | 5 | .. | 5 | .. | 1 | .. | .. | .. | 1 |
| Influenza | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. |
| Intemperance | 2 | 1 | .. | .. | .. | 1 | 4 | .. | 4 | 2 | .. | 1 | 3 | .. | 1 |
| Intussusception | .. | .. | 2 | .. | .. | 1 | 1 | 2 | 3 | .. | .. | .. | .. | 1 | .. |
| Malformation | 1 | .. | .. | .. | .. | 1 | .. | 2 | 2 | 1 | .. | 1 | 1 | .. | 2 |
| " of spine | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Mania | .. | 1 | 1 | 1 | .. | .. | 3 | .. | 3 | 1 | 1 | .. | 1 | 1 | .. |
| Mania à potu | 3 | .. | 4 | .. | 1 | .. | 8 | .. | 8 | 12 | 2 | 1 | 1 | 2 | 1 |
| Marasmus | 11 | 18 | 18 | 13 | 12 | 16 | 3 | 85 | 88 | 19 | 15 | 20 | 13 | 8 | 11 |
| Measles | 13 | 11 | 14 | 8 | 4 | 3 | .. | 53 | 53 | 2 | 3 | 3 | 2 | 1 | .. |
| Mortification | .. | .. | .. | .. | .. | 1 | 1 | .. | 1 | 1 | 1 | 2 | .. | .. | 2 |
| Obstruction of the bowels | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. |
| Old age | 2 | 11 | 5 | 8 | 9 | 10 | 45 | .. | 45 | 4 | 8 | 6 | 12 | 6 | 4 |
| Ossification of heart | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Ozena maligna | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Palsy | 3 | 10 | 3 | 2 | 2 | 1 | 20 | 1 | 21 | 6 | 3 | 4 | 3 | 7 | 3 |
| Perforation of the bowels | .. | .. | 1 | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. |
| Phlegmasia dolens | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. |
| Purpura | .. | 1 | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | 1 | .. | .. | .. |
| Pyæmia | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. |
| Rickets | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. |
| Rheumatism | 2 | .. | 1 | 2 | .. | 1 | 3 | 3 | 6 | 1 | .. | 1 | .. | .. | 2 |
| Rupture of bloodvessels | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. |
| " urethra | 1 | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. |
| Scrofula | 6 | 1 | 6 | 4 | 1 | 5 | 1 | 22 | 23 | 2 | 1 | 3 | 2 | 1 | 1 |
| Scurvy | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | 1 | 1 | .. |
| Smallpox | 7 | 5 | 5 | 4 | 4 | 7 | 8 | 24 | 32 | 3 | 9 | 5 | 3 | 4 | 2 |
| Softening of the brain | .. | 1 | 1 | .. | 1 | .. | 2 | 1 | 3 | 2 | 1 | 2 | 1 | 1 | .. |
| " " heart | 1 | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. |
| Sore mouth | .. | .. | .. | 1 | .. | .. | .. | 1 | 1 | .. | 1 | .. | .. | .. | .. |
| " throat | .. | .. | .. | 1 | 1 | .. | .. | 2 | 2 | .. | 1 | .. | 1 | 2 | 3 |
| Stillborn | 25 | 17 | 24 | 23 | 22 | 18 | .. | 129 | 129 | 32 | 17 | 23 | 13 | 20 | 20 |
| Suppression of urine | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. |
| Syphilis | .. | .. | 1 | .. | .. | .. | .. | 1 | 1 | .. | 1 | .. | .. | .. | .. |
| Tabes mesenterica | 2 | 1 | 3 | 1 | .. | .. | 2 | 5 | 7 | .. | 2 | .. | .. | .. | 2 |
| Teething | .. | .. | 4 | 1 | 2 | .. | .. | 7 | 7 | 2 | 1 | .. | .. | .. | .. |
| Tetanus | .. | .. | .. | .. | 1 | .. | 1 | .. | 1 | 2 | 1 | .. | .. | 1 | 1 |
| Trismus | .. | .. | .. | 1 | 1 | .. | 1 | 1 | 2 | .. | .. | .. | .. | .. | .. |
| Tumour | 1 | .. | .. | 2 | .. | .. | 2 | 1 | 3 | .. | 1 | 1 | .. | .. | 1 |
| " on neck | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. |
| " ovarian | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Ulceration | .. | .. | .. | .. | .. | 1 | .. | 1 | 1 | .. | 1 | .. | .. | .. | .. |
| " of leg | .. | .. | .. | 1 | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. |
| " scalp | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " stomach and bowels | .. | 1 | 2 | .. | .. | .. | 1 | 2 | 3 | .. | .. | .. | .. | 1 | .. |
| " throat | 1 | .. | 1 | .. | .. | .. | .. | 2 | 2 | .. | .. | .. | .. | .. | .. |
| " uterus | .. | 1 | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. |
| Unknown | 21 | 15 | 11 | 10 | 16 | 12 | 43 | 42 | 85 | 25 | 15 | 8 | 14 | 11 | 5 |
| Varioloid | 2 | 1 | .. | .. | 1 | .. | .. | 4 | 4 | .. | .. | 3 | .. | .. | .. |
| Wounds | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Worms | .. | .. | .. | 1 | .. | .. | .. | 1 | 1 | .. | .. | .. | 1 | .. | .. |
| Totals | 605 | 534 | 526 | 469 | 465 | 443 | 1185 | 1857 | 3042 | 602 | 468 | 380 | 313 | 315 | 320 |
| From the almshouse | 53 | | 51 | | 49 | | .. | .. | 153 | 72 | | 53 | | 45 | |
| From the country | 6 | | 3 | | 5 | | .. | .. | 14 | 7 | | 4 | | 8 | |
| People of colour | 45 | | 48 | | 46 | | .. | .. | 139 | 56 | | 43 | | 48 | |

*for* 1857—Continued.

| QUARTER, MARCH 28, 1857. | | | THIRD QUARTER, COMMENCING JUNE 27, 1857. | | | | | | | | | FOURTH QUARTER, COMMENCING OCTOBER 3, 1857. | | | | | | | | | Total for the year. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adults. | Minors. | Total. | July. | | Aug. | | Sept. | | Adults. | Minors. | Total. | Oct. | | Nov. | | Dec. | | Adults. | Minors. | Total. | |
| | | | M. | F. | M. | F. | M. | F. | | | | M. | F. | M. | F. | M. | F. | | | | |
| 14 | 3 | 17 | .. | .. | 1 | .. | 2 | 1 | 4 | .. | 4 | .. | 1 | 3 | .. | 1 | .. | 4 | 1 | 5 | 27 |
| 1 | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 |
| 36 | 29 | 65 | 16 | 21 | 13 | 17 | 14 | 17 | 44 | 54 | 98 | 12 | 14 | 6 | 10 | 10 | 14 | 38 | 28 | 66 | 299 |
| .. | 2 | 2 | .. | 1 | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | 1 | .. | .. | .. | .. | 1 | 1 | 6 |
| .. | 2 | 2 | 1 | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 8 |
| .. | 5 | 5 | .. | 1 | .. | .. | .. | .. | .. | 1 | 1 | 1 | .. | .. | .. | .. | .. | .. | 1 | 1 | 11 |
| 2 | .. | 2 | .. | .. | .. | 1 | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 8 |
| 1 | 1 | 2 | .. | .. | .. | .. | 4 | 3 | .. | 7 | 7 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 9 |
| 7 | .. | 7 | .. | 1 | .. | 1 | 3 | 2 | 7 | .. | 7 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 18 |
| 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 4 |
| .. | 5 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | 2 | 2 | 9 |
| .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 4 | .. | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 7 |
| 19 | .. | 19 | 8 | 2 | 5 | 1 | 1 | .. | 17 | .. | 17 | 8 | 3 | 2 | 1 | 4 | .. | 18 | .. | 18 | 62 |
| 9 | 77 | 86 | 26 | 30 | 48 | 41 | 43 | 43 | 3 | 228 | 231 | 15 | 15 | 15 | 14 | 24 | 18 | 4 | 97 | 101 | 506 |
| .. | 11 | 11 | .. | .. | .. | 2 | .. | .. | .. | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 66 |
| 4 | 2 | 6 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 7 |
| .. | 1 | 1 | .. | .. | .. | 1 | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 |
| 40 | .. | 40 | 5 | 14 | 11 | 17 | 3 | 11 | 61 | .. | 61 | 7 | 12 | 7 | 9 | 6 | 8 | 49 | .. | 49 | 195 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | 1 | 1 |
| .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 26 | .. | 26 | 8 | 6 | 2 | 5 | 5 | 3 | 26 | 3 | 29 | 2 | 1 | 5 | 5 | 3 | .. | 16 | .. | 16 | 92 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | 1 | 2 |
| 2 | 2 | 4 | 3 | .. | 1 | .. | .. | .. | 3 | 1 | 4 | .. | .. | .. | .. | .. | 1 | 1 | .. | 1 | 15 |
| 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 2 | 8 | 10 | 2 | 2 | 1 | 2 | 2 | 4 | 4 | 9 | 13 | .. | .. | 1 | .. | 4 | .. | 1 | 4 | 5 | 51 |
| 4 | .. | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 4 |
| 4 | 22 | 26 | 4 | 1 | .. | .. | .. | .. | .. | 5 | 5 | .. | .. | .. | .. | 1 | 1 | .. | 2 | 2 | 65 |
| 3 | 4 | 7 | .. | 1 | .. | .. | .. | .. | 1 | .. | 1 | 1 | 1 | .. | .. | 1 | .. | 3 | .. | 3 | 14 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| .. | 1 | 1 | .. | .. | .. | 2 | .. | .. | .. | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 4 |
| .. | 7 | 7 | .. | 1 | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | 2 | .. | .. | 1 | .. | 3 | 3 | 13 |
| .. | 125 | 125 | 37 | 26 | 23 | 16 | 42 | 23 | .. | 167 | 167 | 30 | 11 | 25 | 14 | 37 | 19 | .. | 136 | 136 | 557 |
| .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 2 | .. | 2 | 1 | 3 | 5 |
| .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | 1 | 3 |
| .. | 4 | 4 | 3 | 6 | 1 | 3 | 6 | 5 | .. | 24 | 24 | 1 | 2 | 1 | 3 | 2 | .. | 2 | 7 | 9 | 44 |
| .. | 3 | 3 | 1 | 1 | 2 | 2 | .. | .. | .. | 6 | 6 | .. | .. | .. | .. | 1 | .. | .. | 1 | 1 | 17 |
| 3 | 2 | 5 | 1 | .. | 1 | .. | .. | .. | .. | 2 | 2 | 1 | .. | 1 | .. | .. | 1 | 2 | 1 | 3 | 11 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 |
| 2 | 1 | 3 | .. | 1 | .. | .. | .. | 1 | 2 | .. | 2 | .. | .. | .. | .. | .. | 2 | 2 | .. | 2 | 10 |
| .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 1 | .. | 1 | .. | .. | .. | 2 | .. | .. | 2 | .. | 2 | .. | 1 | 3 | .. | .. | .. | 1 | 3 | 4 | 8 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 1 | .. | 1 | .. | .. | 1 | 1 | .. | .. | 1 | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 6 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 |
| .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| 49 | 29 | 78 | 19 | 14 | 15 | 10 | 4 | 9 | 35 | 36 | 71 | 12 | 11 | 13 | .. | 18 | 3 | 40 | 17 | 57 | 291 |
| .. | 3 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 7 |
| .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| .. | 1 | 1 | .. | .. | 1 | .. | 1 | .. | .. | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 4 |
| 1069 | 1329 | 2398 | 636 | 516 | 610 | 536 | 529 | 432 | 1100 | 2169 | 3269 | 380 | 308 | 346 | 305 | 478 | 369 | 1073 | 1113 | 2186 | 10895 |
| .. | .. | 170 | 57 | | 76 | | 44 | | .. | .. | 177 | 45 | | 35 | | 56 | | .. | .. | 136 | .. |
| .. | .. | 19 | 8 | | 8 | | 11 | | .. | .. | 27 | 9 | | 4 | | 2 | | .. | .. | 15 | .. |
| .. | .. | 147 | 51 | | 62 | | 37 | | .. | .. | 150 | 29 | | 34 | | 40 | | .. | .. | 103 | .. |

### TABLE I.—*Mortality for* 1857—Continued.

| | FIRST QUARTER, Commencing January 3, 1857. | | | | | | SECOND QUARTER, Commencing March 28, 1857. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Jan. | Feb. | March. | Adults. | Minors. | Totals. | April. | May. | June. | Adults. | Minors. | Totals. |
| Under 1 year | 263 | 265 | 203 | .. | .. | 731 | 266 | 166 | 142 | .. | .. | 574 |
| From 1 to 2 years | 113 | 111 | 107 | .. | .. | 331 | 109 | 57 | 43 | .. | .. | 209 |
| " 2 to 5 " | 231 | 142 | 128 | .. | .. | 501 | 125 | 84 | 72 | .. | .. | 281 |
| " 5 to 10 " | 82 | 70 | 52 | .. | .. | 204 | 70 | 42 | 37 | .. | .. | 149 |
| " 10 to 15 " | 21 | 23 | 20 | .. | .. | 64 | 21 | 10 | 14 | .. | .. | 45 |
| " 15 to 20 " | 26 | 31 | 25 | .. | .. | 82 | 23 | 22 | 26 | .. | .. | 71 |
| " 20 to 30 " | 93 | 95 | 92 | .. | .. | 280 | 104 | 67 | 54 | .. | .. | 225 |
| " 30 to 40 " | 87 | 71 | 71 | .. | .. | 229 | 102 | 55 | 73 | .. | .. | 230 |
| " 40 to 50 " | 59 | 61 | 54 | .. | .. | 174 | 85 | 51 | 45 | .. | .. | 181 |
| " 50 to 60 " | 55 | 48 | 53 | .. | .. | 156 | 53 | 48 | 47 | .. | .. | 148 |
| " 60 to 70 " | 37 | 39 | 41 | .. | .. | 117 | 44 | 36 | 42 | .. | .. | 122 |
| " 70 to 80 " | 43 | 25 | 40 | .. | .. | 108 | 45 | 30 | 22 | .. | .. | 97 |
| " 80 to 90 " | 25 | 11 | 16 | .. | .. | 52 | 22 | 18 | 16 | .. | .. | 56 |
| " 90 to 100 " | 3 | 3 | 6 | .. | .. | 12 | .. | 7 | 1 | .. | .. | 8 |
| " 100 to 110 " | 1 | .. | .. | .. | .. | 1 | 1 | .. | 1 | .. | .. | 2 |
| Total of monthly mortality | 1139 | 995 | 908 | .. | .. | .. | 1070 | 693 | 635 | .. | .. | .. |
| Total males for the quarter | .. | .. | .. | .. | .. | 1595 | .. | .. | .. | .. | .. | 1298 |
| " females " | .. | .. | .. | .. | .. | 1447 | .. | .. | .. | .. | .. | 1100 |
| " adults " | .. | .. | .. | 1129 | .. | .. | .. | .. | .. | 1069 | .. | .. |
| " minors " | .. | .. | .. | .. | 1913 | .. | .. | .. | .. | .. | 1329 | .. |
| Total for the quarter | .. | .. | .. | .. | .. | 3042 | .. | .. | .. | .. | .. | 2398 |

| | THIRD QUARTER, Commencing June 27, 1857. | | | | | | FOURTH QUARTER, Commencing October 3, 1857. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | July. | Aug. | Sept. | Adults. | Minors. | Totals. | Oct. | Nov. | Dec. | Adults. | Minors. | Totals. |
| Under 1 year | 449 | 479 | 365 | .. | .. | 1293 | 156 | 177 | 216 | .. | .. | 549 |
| From 1 to 2 years | 137 | 173 | 161 | .. | .. | 471 | 90 | 84 | 108 | .. | .. | 282 |
| " 2 to 5 " | 89 | 63 | 25 | .. | .. | 177 | 41 | 31 | 55 | .. | .. | 127 |
| " 5 to 10 " | 45 | 29 | 15 | .. | .. | 89 | 19 | 11 | 21 | .. | .. | 51 |
| " 10 to 15 " | 20 | 12 | 16 | .. | .. | 48 | 6 | 9 | 12 | .. | .. | 27 |
| " 15 to 20 " | 36 | 26 | 29 | .. | .. | 91 | 24 | 24 | 29 | .. | .. | 77 |
| " 20 to 30 " | 100 | 88 | 86 | .. | .. | 274 | 75 | 62 | 89 | .. | .. | 226 |
| " 30 to 40 " | 96 | 80 | 81 | .. | .. | 257 | 82 | 76 | 89 | .. | .. | 247 |
| " 40 to 50 " | 61 | 57 | 64 | .. | .. | 182 | 66 | 56 | 80 | .. | .. | 203 |
| " 50 to 60 " | 49 | 39 | 49 | .. | .. | 137 | 50 | 44 | 54 | .. | .. | 147 |
| " 60 to 70 " | 39 | 45 | 39 | .. | .. | 123 | 30 | 41 | 43 | .. | .. | 114 |
| " 70 to 80 " | 22 | 31 | 18 | .. | .. | 71 | 27 | 18 | 37 | .. | .. | 82 |
| " 80 to 90 " | 16 | 19 | 7 | .. | .. | 42 | 19 | 13 | 10 | .. | .. | 42 |
| " 90 to 100 " | 3 | 5 | 6 | .. | .. | 14 | 3 | 4 | 3 | .. | .. | 10 |
| " 100 to 110 " | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | 2 |
| Total of monthly mortality | 1162 | 1146 | 961 | .. | .. | .. | 688 | 651 | 847 | .. | .. | .. |
| Total males for the quarter | .. | .. | .. | .. | .. | 1776 | .. | .. | .. | .. | .. | 1204 |
| " females " | .. | .. | .. | .. | .. | 1493 | .. | .. | .. | .. | .. | 982 |
| " adults " | .. | .. | .. | 1100 | .. | .. | .. | .. | .. | 1073 | .. | .. |
| " minors " | .. | .. | .. | .. | 2169 | .. | .. | .. | .. | .. | 1113 | .. |
| Total for the quarter | .. | .. | .. | .. | .. | 3269 | .. | .. | .. | .. | .. | 2186 |

TABLE II.—*Mortality from Diseases of the Lungs and Air-passages.*

| DISEASES. | ANNUAL AGGREGATES. | | | QUARTERS OF 1857. | | | |
|---|---|---|---|---|---|---|---|
| | 1855. | 1856. | 1857. | 1st. | 2d. | 3d. | 4th. |
| Abscess, pulmonary | 9 | 1 | ... | ... | ... | ... | ... |
| Angina pectoris | 5 | 5 | 1 | 1 | ... | ... | ... |
| Apnœa | ... | 1 | ... | ... | ... | ... | ... |
| Asphyxia | 28 | 28 | 15 | 9 | 3 | 3 | ... |
| Asthma | 19 | 21 | 33 | 11 | 4 | 7 | 11 |
| Catarrh | ... | ... | 33 | ... | ... | ... | 33 |
| Collapse of lungs | ... | 1 | ... | ... | ... | ... | ... |
| Congestion of the lungs | 82 | 97 | 132 | 29 | 29 | 29 | 45 |
| Consumption, laryngeal | 1 | 1 | ... | ... | ... | ... | ... |
| " of the lungs | 1327 | 1501 | 1544 | 407 | 359 | 386 | 392 |
| Croup | 265 | 268 | 256 | 89 | 65 | 31 | 71 |
| Disease of the chest | 10 | 6 | 7 | 4 | 2 | ... | 1 |
| " lungs | 33 | 37 | 53 | 18 | 14 | 5 | 16 |
| Dropsy of the chest | 48 | 61 | 48 | 14 | 19 | 11 | 4 |
| Effusion on the chest | 3 | 7 | 3 | 1 | 2 | ... | ... |
| " lungs | 7 | 4 | 4 | 2 | ... | ... | 2 |
| Emphysema | ... | 2 | 1 | ... | 1 | ... | ... |
| Empyema | ... | 2 | 1 | ... | 1 | ... | ... |
| Gangrene of the lungs | 1 | ... | 1 | ... | 1 | ... | ... |
| Hemorrhage from the lungs | 21 | 28 | 18 | 8 | 7 | 2 | 1 |
| Influenza | 4 | 2 | 9 | ... | 2 | 7 | ... |
| Inflammation of the bronchi | 233 | 250 | 179 | 72 | 53 | 20 | 34 |
| " " chest | 10 | 7 | 16 | 3 | 5 | 6 | 2 |
| " " larynx | 13 | 34 | 14 | 10 | 3 | 1 | ... |
| " " lungs | 442 | 379 | 504 | 175 | 135 | 65 | 129 |
| " " pleura | 24 | 16 | 27 | 1 | 17 | 4 | 5 |
| " " trachea | 1 | 9 | 11 | 4 | 5 | 1 | 1 |
| Ulceration of larynx | ... | 2 | ... | ... | ... | ... | ... |
| Totals | 2586 | 2770 | 2910 | 858 | 727 | 578 | 747 |
| Hooping-cough | 90 | 77 | 51 | 14 | 10 | 13 | 14 |
| Totals | 2676 | 2847 | 2961 | 872 | 737 | 591 | 761 |
| Total mortality, exclusive of stillborn | 9869 | 11722 | 10338 | | | | |
| Per cent. from diseases of the lungs | 26.20 | 22.77 | 28.13 | | | | |
| Per cent. from consumption of the lungs | 13.45 | 12.80 | | | | | |

TABLE III.—*Deaths from Consumption of the Lungs, during each Month in the year* 1857, *at fifteen distinct periods of life, with the Sexes designated for each month.*

| AGES. | January. | February. | March. | April. | May. | June. | July. | August. | September. | October. | November. | December. | Total. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Under 1 year | 1 | 6 | 2 | 4 | 5 | ... | 8 | 3 | 3 | ... | ... | 2 | 34 |
| From 1 to 2 years | 2 | 6 | 3 | 5 | 2 | ... | 3 | 5 | 8 | 2 | 2 | 4 | 42 |
| “ 2 to 5 “ | 3 | 2 | 5 | 3 | 6 | 3 | 5 | ... | ... | 3 | ... | 2 | 32 |
| “ 5 to 10 “ | 1 | ... | 3 | ... | 1 | ... | 2 | 2 | 4 | ... | 2 | ... | 15 |
| “ 10 to 15 “ | ... | 4 | 3 | 1 | 1 | 1 | 1 | 2 | 5 | 2 | 3 | 2 | 25 |
| “ 15 to 20 “ | 11 | 11 | 17 | 4 | 10 | 11 | 14 | 10 | 17 | 9 | 16 | 17 | 147 |
| “ 20 to 30 “ | 43 | 42 | 40 | 52 | 29 | 27 | 47 | 37 | 33 | 40 | 23 | 45 | 458 |
| “ 30 to 40 “ | 25 | 29 | 35 | 44 | 23 | 19 | 29 | 30 | 27 | 29 | 21 | 39 | 350 |
| “ 40 to 50 “ | 19 | 15 | 17 | 25 | 13 | 10 | 16 | 12 | 14 | 12 | 17 | 33 | 203 |
| “ 50 to 60 “ | 14 | 7 | 12 | 16 | 7 | 14 | 8 | 11 | 13 | 9 | 11 | 15 | 137 |
| “ 60 to 70 “ | 6 | 5 | 10 | 6 | 3 | 3 | 5 | 3 | 4 | 8 | 7 | 10 | 70 |
| “ 70 to 80 “ | 1 | 2 | 3 | 4 | 3 | 1 | 2 | 2 | 1 | 3 | 1 | 3 | 26 |
| “ 80 to 90 “ | 1 | ... | 1 | 1 | 2 | ... | ... | ... | ... | ... | ... | ... | 5 |
| “ 90 to 100 “ | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| “ 100 to 110 “ | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Male | 59 | 63 | 76 | 89 | 50 | 40 | 72 | 56 | 70 | 65 | 46 | 82 | 768 |
| Female | 68 | 66 | 75 | 76 | 55 | 49 | 68 | 61 | 59 | 52 | 57 | 90 | 776 |
| Monthly totals | 127 | 129 | 151 | 165 | 105 | 89 | 140 | 117 | 129 | 117 | 103 | 172 | 1544 |
| Quarterly totals | 407 | | | 359 | | | 386 | | | 392 | | | 1544 |

TABLE IV.—*Mortality from Diseases of the Nervous System.*

| DISEASES. | ANNUAL AGGREGATES. | | | QUARTERS OF 1857. | | | |
|---|---|---|---|---|---|---|---|
| | 1855. | 1856. | 1857. | 1st. | 2d. | 3d. | 4th. |
| Abscess of the brain | 2 | 2 | ... | ... | ... | ... | ... |
| Apoplexy | 110 | 123 | 115 | 32 | 33 | 26 | 24 |
| Chorea | ... | 2 | 1 | ... | 1 | ... | ... |
| Catalepsy | ... | 1 | ... | ... | ... | ... | ... |
| Coma | 2 | 2 | 1 | 1 | ... | ... | ... |
| Compression of the brain | 3 | 8 | ... | ... | ... | ... | ... |
| Concussion of the brain | 1 | ... | 7 | 4 | 3 | ... | ... |
| Congestion of the brain | 175 | 177 | 201 | 59 | 44 | 60 | 38 |
| Convulsions | 626 | 603 | 556 | 141 | 121 | 188 | 106 |
| Coup de soleil | ... | 2 | 6 | ... | ... | 6 | ... |
| Cramp | ... | 11 | 10 | 4 | 1 | 5 | ... |
| Disease of the brain | 97 | 107 | 100 | 33 | 15 | 37 | 15 |
| Dropsy of the brain | 254 | 242 | 173 | 58 | 40 | 66 | 9 |
| Effusion of the brain | 72 | 94 | 92 | 30 | 13 | 39 | 10 |
| Epilepsy | 25 | 24 | 18 | 15 | 2 | 1 | ... |
| Hysteria | ... | 3 | ... | ... | ... | ... | ... |
| Inflammation of the brain | 288 | 329 | 306 | 71 | 62 | 105 | 68 |
| " " tympanum | 1 | ... | ... | ... | ... | ... | ... |
| Irritation of brain and spinal marrow | 1 | ... | ... | ... | ... | ... | ... |
| Mania or insanity | 17 | 12 | 7 | 3 | 4 | ... | ... |
| Mania à potu | 25 | 43 | 62 | 8 | 19 | 17 | 18 |
| Neuralgia | 1 | 1 | ... | ... | ... | ... | ... |
| Palsy | 106 | 104 | 92 | 21 | 26 | 29 | 16 |
| Softening of the brain | 20 | 40 | 14 | 3 | 7 | 1 | 3 |
| " " spinal marrow | ... | 2 | ... | ... | ... | ... | ... |
| Teething | 16 | 29 | 17 | 7 | 3 | 6 | 1 |
| Tetanus | 17 | 13 | 11 | 1 | 5 | 2 | 3 |
| Trismus | 8 | 2 | 2 | 2 | ... | ... | ... |
| Totals | 1866 | 1976 | 1791 | 493 | 399 | 588 | 311 |
| Puerperal convulsions | 15 | 2 | 1 | 1 | ... | ... | ... |
| " mania | 2 | ... | ... | ... | ... | ... | ... |
| Totals | 1883 | 1978 | 1792 | 494 | 399 | 588 | 311 |
| Total mortality, exclusive of stillborn | 9869 | 11722 | 10338 | | | | |
| Per cent. of total mortality | 18.90 | 16.87 | 17.33 | | | | |

TABLE V.—*Mortality from Diseases of some Organs of Nutrition.*

| DISEASES. | ANNUAL AGGREGATES. | | | QUARTERS OF 1857. | | | |
|---|---|---|---|---|---|---|---|
| | 1855. | 1856. | 1857. | 1st. | 2d. | 3d. | 4th. |
| Abscess | 17 | 40 | 35 | 7 | 13 | 9 | 6 |
| " abdominal | 1 | ... | ... | ... | ... | ... | ... |
| " of the liver | 2 | 1 | 1 | 1 | ... | ... | ... |
| Cancer of the stomach and bowels | 18 | 4 | 7 | 5 | 1 | 1 | ... |
| Cholera | 33 | 16 | 3 | ... | 2 | 1 | ... |
| " infantum | 566 | 722 | 534 | 2 | 10 | 508 | 14 |
| " morbus | 29 | 35 | 10 | ... | 1 | 9 | ... |
| Cirrhosis of the liver | 7 | 6 | 3 | 1 | 1 | 1 | ... |
| Colic | 8 | 17 | 7 | 3 | 2 | 1 | 1 |
| Constipation | 2 | 3 | ... | ... | ... | ... | ... |
| Consumption of the bowels | 4 | 3 | 5 | ... | ... | 4 | 1 |
| Diarrhœa | 177 | 149 | 119 | 12 | 18 | 66 | 23 |
| Disease of the liver | 25 | 27 | 41 | 7 | 6 | 9 | 19 |
| " stomach and bowels | 20 | 27 | 17 | 5 | 6 | 3 | 3 |
| Dropsy | 110 | 213 | 239 | 76 | 57 | 45 | 61 |
| " abdominal | 31 | 8 | 6 | ... | 2 | 4 | ... |
| Dysentery | 266 | 301 | 198 | 15 | 18 | 144 | 21 |
| Dyspepsia | 1 | ... | 2 | ... | 1 | 1 | ... |
| Gout | 4 | 7 | 5 | 2 | 2 | 1 | ... |
| Icterus | 27 | 21 | 11 | 4 | 5 | 2 | ... |
| Ileus | 4 | 1 | ... | ... | ... | ... | ... |
| Inflammation of the liver | 38 | 39 | 25 | 4 | 11 | 10 | ... |
| " " peritoneum | 54 | 68 | 56 | 23 | 19 | 10 | 4 |
| " " stomach and bowels | 187 | 184 | 299 | 70 | 65 | 98 | 66 |
| Intussusception | 7 | 6 | 4 | 3 | 1 | ... | ... |
| Marasmus | 436 | 484 | 506 | 88 | 86 | 231 | 101 |
| Obstruction of the bowels | 13 | 9 | 2 | ... | 1 | 1 | ... |
| Scrofula | 54 | 61 | 51 | 23 | 10 | 13 | 5 |
| Tabes mesenterica | 28 | 36 | 44 | 7 | 4 | 24 | 9 |
| Tuberculosis | 6 | ... | ... | ... | ... | ... | ... |
| Ulceration of the stomach and bowels | 21 | 15 | 6 | 3 | 1 | 2 | ... |
| Totals | 2196 | 2503 | 2236 | 361 | 343 | 1198 | 334 |
| Total mortality, exclusive of stillborn | 9869 | 11722 | 10338 | | | | |
| Per cent. of total mortality | 22.35 | 21.35 | 21.62 | | | | |

TABLE VI.—*Mortality from Diseases of the Utero-Genital Organs.*

| DISEASES. | ANNUAL AGGREGATES. | | | QUARTERS OF 1857. | | | |
|---|---|---|---|---|---|---|---|
| | 1855. | 1856. | 1857. | 1st. | 2d. | 3d. | 4th. |
| Albuminuria | 6 | 9 | 7 | 1 | 4 | 2 | ... |
| Amenorrhœa | ... | 2 | ... | ... | ... | ... | ... |
| Cancer of mammæ | 7 | 2 | ... | ... | ... | ... | ... |
| " uterus | 18 | 5 | 4 | 3 | ... | ... | 1 |
| Childbed | 2 | 2 | 7 | 2 | ... | 3 | 2 |
| Chlorosis | 1 | 2 | 1 | 1 | ... | ... | ... |
| Convulsions, puerperal | 15 | 2 | 1 | 1 | ... | ... | ... |
| Diabetes | ... | ... | 7 | 4 | 2 | ... | 1 |
| Disease of the bladder | 1 | 1 | 1 | 1 | ... | ... | ... |
| " kidneys | 3 | 16 | 8 | 3 | 2 | 2 | 1 |
| " ovaries | 3 | 1 | 2 | 2 | ... | ... | ... |
| " prostate gland | 1 | 1 | ... | ... | ... | ... | ... |
| " uterus | 3 | 5 | 2 | 2 | ... | ... | ... |
| Dropsy, ovarian | 1 | 1 | ... | ... | ... | ... | ... |
| Fever, puerperal | 41 | 69 | 49 | 33 | 12 | 3 | 1 |
| Hemorrhage from uterus | 13 | 7 | 5 | 2 | 2 | 1 | ... |
| Inflammation of the bladder | 5 | 8 | 9 | ... | 1 | 3 | 5 |
| " " kidneys | 4 | 7 | 7 | 3 | 3 | 1 | ... |
| " " prostate gland | 1 | ... | ... | ... | ... | ... | ... |
| " " uterus | 8 | 15 | 8 | 5 | 2 | 1 | ... |
| Mania, puerperal | 2 | ... | ... | ... | ... | ... | ... |
| Rupture of the bladder | 1 | ... | ... | ... | ... | ... | ... |
| " urethra | 1 | ... | 1 | 1 | ... | ... | ... |
| " uterus | 3 | ... | ... | ... | ... | ... | ... |
| Stone in bladder | 1 | ... | ... | ... | ... | ... | ... |
| Suppression of urine | ... | ... | 3 | ... | ... | ... | 3 |
| Syphilis | 4 | 5 | 2 | 1 | 1 | ... | ... |
| Tumour, ovarian | 2 | 1 | 1 | ... | 1 | ... | ... |
| Ulceration of the uterus | 1 | ... | 1 | 1 | ... | ... | ... |
| Totals | 148 | 161 | 126 | 66 | 30 | 16 | 14 |

## Table VII.—*Mortality from Fevers.*

| DISEASES. | ANNUAL AGGREGATES. | | | QUARTERS OF 1857. | | | |
|---|---|---|---|---|---|---|---|
| | 1855. | 1856. | 1857. | 1st. | 2d. | 3d. | 4th. |
| Fever . . . . . . . | 16 | 10 | 3 | 3 | ... | ... | ... |
| " bilious . . . . . . | 36 | 24 | 25 | 2 | 3 | 7 | 13 |
| " cerebral . . . . . . | 2 | ... | 2 | ... | ... | 1 | 1 |
| " congestive . . . . . | 7 | 3 | 5 | ... | 1 | 3 | 1 |
| " continued . . . . . | 1 | ... | 2 | 2 | ... | ... | ... |
| " enteric . . . . . . | ... | ... | 2 | ... | 2 | ... | ... |
| " gastric . . . . . . | 4 | 2 | 4 | 2 | 1 | 1 | ... |
| " hectic . . . . . . | 4 | 2 | 2 | ... | 2 | ... | ... |
| " intermittent . . . . . | 7 | 14 | 5 | 3 | 2 | ... | ... |
| " malignant . . . . . | 2 | ... | ... | ... | ... | ... | ... |
| " nervous . . . . . . | 2 | 7 | 9 | 3 | 1 | ... | 5 |
| " pernicious . . . . . | 2 | ... | ... | ... | ... | ... | ... |
| " puerperal . . . . . . | 41 | 69 | 49 | 33 | 12 | 3 | 1 |
| " remittent . . . . . . | 48 | 22 | 23 | 7 | 5 | 4 | 7 |
| " scarlet . . . . . . | 163 | 992 | 704 | 425 | 153 | 60 | 66 |
| " typhoid . . . . . . | 231 | 229 | 175 | 42 | 36 | 45 | 52 |
| " typhus . . . . . . | 59 | 49 | 38 | 8 | 5 | 11 | 14 |
| " " icterodes . . . . | ... | 5 | ... | ... | ... | ... | ... |
| " yellow . . . . . . | 3 | ... | ... | ... | ... | ... | ... |
| Totals . . . . . . . | 628 | 1428 | 1048 | 530 | 223 | 135 | 160 |
| Total mortality, exclusive of stillborn | 9869 | 11722 | 10338 | | | | |
| Per cent. of total mortality . . | 6.30 | 12.18 | 10.13 | | | | |

## Table VIII.—*Mortality from Measles.*

| DISEASES. | ANNUAL AGGREGATES. | | | QUARTERS OF 1857. | | | |
|---|---|---|---|---|---|---|---|
| | 1855. | 1856. | 1857. | 1st. | 2d. | 3d. | 4th. |
| Measles . . . . . . . | 24 | 141 | 66 | 53 | 11 | 2 | ... |

Table IX.—*Causes assigned for Death where the number is* 90 *and upward.*

| DISEASES. | ANNUAL AGGREGATES. | | | QUARTERS OF 1857. | | | |
|---|---|---|---|---|---|---|---|
| | 1855. | 1856. | 1857. | 1st. | 2d. | 3d. | 4th. |
| Apoplexy | 110 | 123 | 115 | 32 | 33 | 26 | 24 |
| Casualties | 102 | 158 | 118 | 21 | 19 | 35 | 43 |
| Cholera infantum | 566 | 722 | 534 | 2 | 10 | 508 | 14 |
| Consumption of the lungs | 1327 | 1501 | 1544 | 407 | 359 | 386 | 392 |
| Congestion of the brain | 175 | 177 | 201 | 59 | 44 | 60 | 38 |
| “ “ lungs | ... | 97 | 132 | 29 | 29 | 29 | 45 |
| Convulsions | 626 | 603 | 556 | 141 | 121 | 188 | 106 |
| Croup | 265 | 268 | 256 | 89 | 65 | 31 | 71 |
| Debility | 393 | 430 | 378 | 91 | 75 | 115 | 97 |
| Diarrhœa | 177 | 149 | 119 | 12 | 18 | 66 | 23 |
| Disease of the brain | 97 | 107 | 100 | 33 | 15 | 37 | 15 |
| “ heart | 170 | 179 | 222 | 49 | 47 | 50 | 76 |
| Dropsy | 136 | 213 | 239 | 76 | 57 | 45 | 61 |
| “ of the brain | 254 | 242 | 173 | 58 | 40 | 66 | 9 |
| Dysentery | 266 | 301 | 198 | 15 | 18 | 144 | 21 |
| Effusion on the brain | ... | 94 | 92 | 30 | 13 | 39 | 10 |
| Erysipelas | ... | 100 | 95 | 35 | 28 | 15 | 17 |
| Fever, scarlet | 163 | 992 | 704 | 425 | 153 | 60 | 66 |
| “ typhoid | 231 | 229 | 175 | 42 | 36 | 45 | 52 |
| Hooping-cough | 90 | ... | ... | ... | ... | ... | ... |
| Inanition | 104 | 114 | ... | ... | ... | ... | ... |
| Inflammation of the brain | 288 | 329 | 306 | 71 | 62 | 105 | 68 |
| “ “ bronchi | 233 | 250 | 179 | 72 | 53 | 20 | 34 |
| “ “ lungs | 442 | 379 | 504 | 175 | 135 | 65 | 129 |
| “ “ stomach and bowels | 187 | 184 | 299 | 70 | 65 | 98 | 66 |
| Marasmus | 436 | 484 | 506 | 88 | 86 | 231 | 101 |
| Measles | ... | 141 | ... | ... | ... | ... | ... |
| Old age | 172 | 172 | 195 | 45 | 40 | 61 | 49 |
| Palsy | 106 | 104 | 92 | 21 | 26 | 29 | 16 |
| Smallpox | 281 | 390 | ... | ... | ... | ... | ... |
| Stillborn | 588 | 612 | 557 | 129 | 125 | 167 | 136 |
| Unknown | 220 | 257 | 291 | 85 | 78 | 71 | 57 |
| Drowned | 106 | 105 | 134 | 3 | 44 | 70 | 17 |

TABLE X.—*Deaths, with the Sexes, for each Month in the Year, and the Number at Sixteen Distinct Periods of Life, with the Percentages to Total Mortality, Exclusive of the Stillborn—also the Stillborn Children for each Month, and their Sex.*

| MONTHS. | Males. | Females. | STILLBORN. | | | Under 1 year. | 1 to 2. | 2 to 5. | 5 to 10. | 10 to 15. | 15 to 20. | 20 to 30. | 30 to 40. | 40 to 50. | 50 to 60. | 60 to 70. | 70 to 80. | 80 to 90. | 90 to 100. | 100 to 110. | Total. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | M. | F. | Total. | | | | | | | | | | | | | | | | |
| January . . . | 605 | 534 | 25 | 17 | 42 | 221 | 113 | 232 | 82 | 21 | 26 | 93 | 87 | 59 | 55 | 37 | 43 | 25 | 3 | 1 | 1140 |
| February . . | 525 | 470 | 24 | 23 | 47 | 218 | 111 | 142 | 70 | 23 | 31 | 95 | 71 | 61 | 48 | 39 | 25 | 11 | 3 | ... | 995 |
| March . . . | 465 | 443 | 22 | 18 | 40 | 163 | 106 | 128 | 52 | 20 | 25 | 92 | 71 | 54 | 53 | 41 | 40 | 16 | 6 | ... | 907 |
| April . . . | 602 | 468 | 32 | 17 | 49 | 217 | 109 | 125 | 70 | 21 | 23 | 104 | 102 | 85 | 53 | 44 | 45 | 22 | ... | 1 | 1070 |
| May . . . | 380 | 313 | 23 | 13 | 36 | 130 | 57 | 84 | 42 | 10 | 22 | 67 | 55 | 51 | 48 | 36 | 30 | 18 | 7 | ... | 693 |
| June . . . | 316 | 319 | 20 | 20 | 40 | 102 | 43 | 72 | 37 | 14 | 26 | 54 | 73 | 46 | 47 | 41 | 22 | 16 | 1 | 1 | 635 |
| July . . . | 637 | 525 | 37 | 26 | 63 | 386 | 137 | 89 | 45 | 20 | 36 | 100 | 96 | 61 | 49 | 39 | 22 | 16 | 3 | ... | 1162 |
| August . . . | 610 | 536 | 23 | 16 | 39 | 440 | 173 | 63 | 29 | 12 | 26 | 88 | 80 | 57 | 39 | 45 | 31 | 19 | 5 | ... | 1146 |
| September . . | 529 | 432 | 42 | 23 | 65 | 300 | 161 | 25 | 15 | 16 | 29 | 86 | 81 | 64 | 49 | 39 | 18 | 7 | 6 | ... | 961 |
| October . . . | 380 | 308 | 30 | 11 | 41 | 115 | 90 | 41 | 19 | 6 | 24 | 75 | 82 | 66 | 50 | 30 | 27 | 19 | 3 | ... | 688 |
| November . . | 346 | 305 | 25 | 14 | 39 | 138 | 84 | 31 | 11 | 9 | 24 | 62 | 76 | 56 | 44 | 41 | 18 | 13 | 4 | 1 | 651 |
| December . . | 478 | 369 | 37 | 19 | 56 | 160 | 108 | 55 | 21 | 12 | 29 | 89 | 89 | 80 | 54 | 43 | 37 | 10 | 3 | 1 | 847 |
| Totals . . . | 5873 | 5022 | 340 | 217 | 557 | 2590 | 1292 | 1087 | 493 | 184 | 321 | 1005 | 963 | 740 | 589 | 475 | 358 | 192 | 44 | 5 | 10895 |
| Percentages to totals | 53.91 | 46.09 | 3.12 | 1.99 | 5.11 | 25.05 | 12.49 | 10.51 | 4.77 | 1.77 | 3.10 | 9.72 | 9.31 | 7.15 | 5.69 | 4.59 | 3.46 | 1.85 | 0.42 | .0004 | |

# REVIEWS.

Art. XVII.—*Clinique de l'Hôpital du Midi—Leçons sur le Chancre,* professées par le Docteur Ricord, rédigées et publiées par Alfred Fournier, Interne de l'Hôpital du Midi, Paris, 1858. 1 vol. in 8vo.

*Clinic of the Midi Hospital—Lectures on Chancre,* delivered by Dr. Ricord, collected and published by A. Fournier, House Physician of the Midi Hospital, Paris, 1858. 1 vol. 8vo.

This work contains many facts in proof of the doctrines formerly proposed or maintained by M. Ricord, and the avowal of the adoption of some new doctrines which the lecturer had opposed for many years. In the first lecture M. Ricord states that he has changed his views on various points, and he quotes the French verse, which declares, that he who never changes is absurd. This is something new for the great syphilographer, who has hitherto been very pertinacious in his opinions. We congratulate him upon his change of views, and must add, that we think he has not changed enough, as we propose showing hereafter.

M. Ricord maintains that a chancre is the sole origin of syphilis, except when inherited. He insists upon the analogy of chancre and syphilis, on one side, and the bite of a mad dog and hydrophobia on the other. He still affirms that a chancre results always from a chancre, and cannot generate anything but a chancre. The pus of blennorrhagia, of bubo, of a flat pustule, he still considers as incapable of generating a chancre and syphilis. But he has given up the important doctrine which he had been so ardently teaching for twenty-five years, that there is but one kind of chancre. He now admits that there are two distinct species of this affection, and, with his usual power of argumentation, he brings forward many reasons to support his new view.

It is known that, before and since the time of Hunter, until the beginning of this century, it was almost universally believed that the varieties in the consequences of a chancre were dependent upon the differences of constitutions, of sexes, ages, etc. In our century, Carmichael was the first who disbelieved in the unity of the virulent principle, but he erroneously maintained that there were four species of chancres. Two pupils of M. Ricord, during the last eight or ten years, have tried to prove that there are two kinds of chancre. One of these syphilographers, M. Bassereau, insists upon the existence of one of these species among the Greeks and Romans; it is the simple contagious ulcer of the genital organs, while the other, the indurated, the infecting chancre, the only origin of syphilis, is a new affection.

The other pupil of M. Ricord, M. Clerc, does not believe that there are positively two species of chancres, but he admits two distinct varieties of the same virus. One of them produces the indurated chancre, the other the simple or non-infecting chancre. They both are usually transmitted as a distinct pathological species; but the simple chancre he thinks to be the result of the inoculation of an infecting chancre in a person who has, or who has had constitutional syphilis, and that it is the analogue of varioloid, so that he proposes to call it *chancroid*.

M. Ricord points out the great differences of the species of chancre as regards their symptoms, their relative frequency, the places where they are found, their treatment, etc. As regards frequency, the non-infecting variety, the simple chancre, is by far the most frequent. During three months at the consultation of the Hôpital du Midi, out of 341 cases of chancre there were 126 indurated or infecting, and 215 simple. M. Puche, from 1840 to 1852, has seen only 1955 indurated chancres, and 8,045 simple chancres, out of 10,000 cases. This is a fortunate result if it be true that the simple chancre never produces syphilis.

M. Ricord explains the great relative frequency of simple chancres: 1st. By the fact that they secrete pus which is more active and preserves longer the power of contagion than that of indurated chancres. 2d. They may exist many times on the same person, whilst indurated chancres, generally, do not. The learned teacher insists upon the impossibility of any one escaping the contagion of a simple chancre, if well inoculated with the fresh pus of this ulcer while it is at the period of virulence. In this, we think that he is mistaken, and the inventor of syphilization, M. Auzias-Turenne, and many other able and respectable physicians, such as Bœck and Sperino, have shown that men and children saturated with syphilis, or *syphilized*, to use the new term, cannot have any kind of chancre.

M. Ricord used to assert that chancre may be produced anywhere on the surface of the human body; now that he admits two kinds of chancres, he makes the important affirmation which is confirmed by his colleagues at the Midi Hospital, which is, that the indurated chancre may appear any where, but, strange to say, the simple chancre never occurs on the head (either on the face or the cranium). He has shown it to his pupils on the genital organs, on the thighs, on the legs, on the arms, on the abdomen, on the back, on the thorax, etc.; but for twenty-five years he has never met one on the face or on the cranium. On the contrary, he has seen the infecting or indurated chancre on all the parts of the head, on the lips, on the tongue, on the eyelids, on the forehead, on the nose, and even on the top of the head.

M. Ricord insists on the strange fact that the superficial lymphatic ganglions are alone attacked, and in cases of simple or non-infecting chancres are alone the seat of suppurative inflammation. It seems that the influence of the absorbed matter is lost after it has acted on the first lymphatic glands that it meets. This is the more strange, since the pus of a bubo can engender a simple chancre, and, therefore, it seems to be similar to the pus which has been conveyed to it by the lymphatics. How is it, then, that carried, as it must be, to deeper lymphatic glands, it does not produce there a suppurative bubo?

The capital fact, however, concerning bubos is the radical difference between those due to non-infecting chancres and those produced by infecting chancres. In the first place, the simple chancre does not always give rise to the formation of a bubo; while it is not so in the case of an infecting chancre, which constantly produces one or several bubos. The non-infecting sore produces an *acute* bubo, *i. e.*, an inflammatory painful one, progressing rapidly towards suppuration, capable of producing a real ganglionary chancre. Besides this, bubo exists generally, only in one of the glands of the region where it appears; it is an adenitis mono-ganglionary. M. Fournier states that out of 207 patients affected with simple chancres, there were 65 only who had a bubo, and 142 without. The pus of such a bubo can generate a simple chancre when inoculated. On the contrary, the bubo due to an infecting sore, which very rarely gives origin to pus, does not then furnish a purulent matter capable of producing chancre when inoculated. This last bubo is *indurated* and is in this respect analogous to the chancre from which it originates; it is *multiple*, painless, and without inflammation. It appears precisely at the time that the induration becomes evident around the chancre.

An infecting chancre is usually single, while the non-infecting sore is multiple either at first, or in consequence of the inoculation of neighbouring parts by the pus of the first ulcer. This last is the kind of chancre which tends to extend and to destroy tissues; it is the most liable to acquire the phagedenic character. The indurated chancre is quickly limited, and spontaneously proceeds to cicatrization; its pus promptly loses its virulent power, at least upon the person on whom it exists.

M. Ricord adds to the above differences the following: The simple chancre may, perhaps, be transmitted to inferior animals, while the infecting ulcer can only be transmitted to man. The first can be reproduced indefinitely on the same person, the second it seems cannot exist more than once. Besides the first originates only from its own variety; and the second, also, results only from a similar one; but in a syphilitic patient, the infecting chancre originates in an ulcer with a soft basis, which looks like a simple non-infecting chancre. In this last case, however, we have proof that the infecting sore, although it has not its characters, does not lose the power of generating, for when by contagion the pus finds a virgin soil it produces an indurated chancre.

M. Ricord insists on the importance of these differences in relation to the prognosis and the treatment. As regards prognosis it is quite evident that it is of the utmost importance to be able to determine, as it is usually easy from the absence or presence of induration to do, that a chancre will be a simple local affection, or that it is the beginning of syphilis.

Although facts have been published which militate against the opinion of M. Ricord, that a man who has had an infecting chancre cannot have another, he resists the interpretation, and he has found a plausible way of getting over most of these facts. The facts to which we have alluded are the following: if an individual who has had syphilis be exposed to the contagion of an infecting chancre, a simple sore is produced, but he transmits to others who have not had syphilis an infecting chancre. Mr. R., therefore, admits the possibility of a person who has, or has had, constitutional syphilis having a simple sore, but he still affirms that such a person cannot have an indurated chancre. He thinks that this apparently simple sore, however, is the source of a kind of pus, which, when finding, what he calls, a virgin soil, will act as the pus of the infecting ulcer would have done which had caused this simple sore. In this respect M. Ricord will have to change again, as there are, at least, some few facts proving that an indurated infecting chancre may exist with all its characteristics in a person who has had syphilis.

Practitioners who are not willing to admit that a simple, soft chancre is never the origin of syphilis, are not aware, according to M. Ricord, of many circumstances which this able observer points out as the causes of their error. In the first place, there are some anatomical regions where it is difficult to ascertain the existence of induration, when we are not accustomed to detect it. This is the case as regards the mucous membrane of the vagina, the *car-*

*unculæ myrtiformes*, the anus, etc., where the induration may be extended in surface but is not deep, and resembles a piece of parchment; sometimes it is so thin that none but those much accustomed to it can detect its presence. In the second place, indurations in the above named regions disappear very quickly, and often before cicatrization. These are the causes of mistake which have led some persons to say that infecting chancres had no induration in women. M. Ricord insists upon the complete similarity of induration in women and men in all the parts of the body common to the two sexes; and he remarks that on the external parts (clitoris, etc.,) of the female genital organs the induration is deep, well marked, and lasting. So it is also on the uterus.

Cauterization of a soft sore may produce such an induration around it, that it is almost impossible to distinguish it from an infecting chancre. The diagnosis in such a case may easily be established by the bubo.

An important fact concerning the differences between the two kinds of chancres results from the comparative analyses of the blood. M. Grassi, under the direction, and at a time when the eminent syphilographer had not yet admitted the existence of the radical difference which he now acknowledges between the two species of chancres, had found that the blood remained normal, or nearly so, in cases of simple sores, while the absolute quantity of globules is notably diminished, and that of albumen increased, in cases of indurated chancres.

If simple chancres never give origin to syphilis, and if this kind of chancre is much more common than the other, it may readily be understood how mischievous it is to give mercury, at once, and indiscriminately to every patient attacked with chancre whatever are its characters.

A soft, non-infecting chancre needs only *local* treatment, but it requires very active and careful treatment on account of the dangers of phagedenism. M. Ricord says that the whole secret of success in healing such a sore, is to transform it from a specific, virulent ulcer, into a simple and non-virulent one. To attain this end cauterization is the best means; but a deep, a thorough cauterization, not a slight superficial one, is necessary. The caustic must be spread not only over the whole surface of the chancre, but also a little further. All the mild caustics are inefficient; it is necessary to employ a *destructive* caustic. M. Ricord has successively employed the Vienna paste, potash, nitric acid, the red-hot iron, etc.; all of which have some inconvenience; and he proposes a new agent, which he thinks to possess marvellous efficacy and to be unobjectionable in any respect. This caustic is sulphuric acid, united with powdered vegetable charcoal, in the proportions necessary to make a half solid paste. Applied to chancres, this paste soon desiccates and forms a kind of crust, which remains attached to the tissues and adheres for many days after its application, not separating usually until the second week. When the caustic becomes detached, the ulcer is nothing but a simple one without virulence, and very quickly progressing towards cicatrization. Sometimes the work of repair is almost completely achieved before the fall of the crust, and it is not rare to find the cicatrix already formed.

This caustic unfortunately causes much pain, but the pain is much less than that produced by nitric acid or the red-hot iron, and it persists for a shorter period than that resulting from the application of the Vienna paste. M. Ricord insists upon the immediate application of the caustic without the least delay; but, sometimes, patients are not willing to be cauterized. He then makes use of lotions with *aromatic wine*, and dresses the ulcer with charpie saturated with this medicine. When there is a tendency to phagedenism, M. Ricord employs tartrate of potash and iron; his prescription is the following:—

1st. Take every day three tablespoonsful of the following solution: Distilled water, 200 grammes (6 ounces); tartrate of potash and iron, 30 grammes (1 ounce).

2d. Dress the ulcer or ulcers twice a day with charpie saturated with the above solution.

M. Ricord says that nothing can be more hurtful to soft sores than fatty substances. The mercurial ointment is an irritant which is one of the most frequent causes of phagedenism; mercury is a very dangerous remedy against this kind of chancre. When the soft ulcer exists in the urethra, M. Ricord at first tries to diminish the inflammation, and he states that camphor, belladonna, digitalis, lupulin, etc., have no power in this respect, and that they do not prevent erection. He orders the application of from 15 to 20 leeches on the perineum or on the penis, baths, and abundant drinks. When the inflammation is diminished, he orders injections into the canal of a mixture of aromatic wine and a decoction of poppies. If there is irritation caused by this injection, he employs pure aromatic wine.

As a local affection the indurated chancre is to be treated almost as the non-infecting ulcer, and even more simply. Regular dressings with aromatic wine or calomel ointment may be quite sufficient, as the ulcer usually tends to spontaneous cicatrization. But here, much more than for the soft chancre, cauterization in the very beginning is of the greatest importance. The general infection not being an immediate result, as it has so often been erroneously said, the same thing must be done as after the bite of a mad dog, or of a venomous snake, *i. e.* to destroy the infecting principle, as Hunter long ago taught. M. Ricord proclaims that all the chancres which he has cauterized or which have been cauterized in his presence from the first to the fourth day after contagion, none have been followed by symptoms of constitutional syphilis. It results from this that the syphilitic virus is not absorbed before the fourth day after contagion.

It is important to add here to the assertions of M. Ricord, the testimony of a distinguished physician of Vienna, Prof. Sigmund, whose practice is as large as that of the Paris teacher of syphilography. The observation of more than a thousand cases in a period of 11 years, has proved to Prof. Sigmund that there are never secondary symptoms after the complete destruction of chancres during the first four days. He says also that he knows of but two cases, which even seem to be doubtful, in which the cauterization made on the fifth day has not prevented the appearance of secondary symptoms. He cauterizes even after the fifth day, because he thinks that the chances of preservation are not entirely lost, and also with the view of preventing the communication of the disease to others. M. Ricord, on the contrary, neglects cauterization so soon as induration has appeared, because he thinks that then the virus has been absorbed. The treatment, after induration has appeared, according to M. Ricord, should always consist in the exhibition of mercury, which is given either internally or by frictions on the skin, or pulmonary inhalations. M. Ricord thinks that mercury should be given at once when there is no doubt about the nature of the chancre, but if there is the very least doubt, he insists upon the importance of waiting some time, so as to be quite sure whether or not there is a real syphilis. He proposes to wait a few weeks, if nothing appears, and if two, three, four months pass away without any manifestation of syphilis, then we may be sure that the doubtful ulcer was not an infecting one, and it is possible for the physician to give to the patient the positive affirmation that he has not had syphilis; while if mercury had been employed it would have remained doubtful whether it had prevented the disease manifesting itself, or done nothing if the disease was not present. And now, as mercury may fail to prevent the future developments of this horrible affection, it is easy to understand what a *social* importance there may be for the patient to have his mind relieved of all doubts in regard to such a danger.

M. Ricord not only thinks that it is unnecessary to salivate a patient to cure him, but that the curative influence of mercury is generally suspended when the morbid symptoms due to mercury show themselves. The great Hunter had already asserted the same thing, but a great many physicians ignore or forget, or wrongly deny the correctness of this assertion.

Concering the treatment of salivation, there is in the work we are reviewing a paper on the use of the chlorate of potash, by M. Fournier, the house physician, to whom we are indebted for the publication of these lectures of M. Ricord. M. Herpin, of Geneva, and, after him, M. Demarquay, have pointed out the great benefit to be derived from the use of chlorate of potash against mercurial stomatitis. But these practitioners at the same time that they employed this medicine ceased the use of mercury. M. Ricord has persisted in the exhibition of mercury while he gave chlorate of potash, and the result has been that the salivation, the tumefaction of the gums, the ulcerations of the buccal mucous membrane, the pain, etc., have disappeared in a few days. It seems, therefore, that chlorate of potash is a real specific against mercurial stomatitis. Besides, it seems from facts recorded by M. Fournier that chlorate of potash may be regarded as a preservative of stomatitis; and also that the curative influence of mercury appears not to be diminished during the exhalation of chlorate of potash. This substance is to be given internally, 6 grammes (nearly 5 scruples), in a potion of 200 grammes (6 ounces).

It is well known that M. Ricord, as well as most physicians now, have completely abandoned treating the tertiary symptoms of syphilis with mercury. Iodide of potassium is the only medicine which M. Ricord employs against these symptoms. He thinks it is a great mistake to give enormous doses of this medicine, as some French physicians have done lately; but he uses larger doses than Amerian practitioners are accustomed to employ. During the three or four first days he prescribes 3 or 4 grammes (about 1 drachm) of iodide of potassium a day, and afterwards he increases the dose to 5, 6, or 8 grammes (4 to 6 or 7 scruples), or even more a day.

In the commencement of syphilis, M. Ricord's rule of treatment consists in giving mercury for six months, and iodide of potassium for three months.

These are the most interesting facts and views to be found in the *Lectures on Chancre.* We regret that M. Ricord leaves us in the dark concerning two important points. The first of these consists in the doctrine long held by this eminent syphilographer regarding the loss of contagiousness of infecting chancres, when they are becoming mucous papulæ. M. Ricord had certainly well proved that the matter of these chancres, when inoculated on the person upon whom they exist, does not produce a chancre, but he had concluded that the same innocuity would exist on other persons. Many unfortunate consequences have been the results of the admission of this view as a well founded one, particularly among French medical students. It is yet to be determined at what time the muco-purulent matter of mucous papulæ, resulting from infecting chancres, can propagate syphilis; and the energetically maintained doctrine of M. Ricord, that a chancre alone can originate a chancre, must be considered as not absolutely correct, unless we term mucous papulæ of recent formation, still producing muco-pus, chancres.

There is another question which M. Ricord has not solved, and this is a capital one; it consists in the admission of the existence of one or two kinds of chancrous virus. It would seem from so many statements made by the learned teacher on the differences between the two kinds of chancres, that he must admit that there are two kinds of virus. He declares, however, and rather obscurely, that we must wait and not try now to solve this question. As regards the existence of one or two syphilitic poisons, he is more decided and he declares positively that there is but one kind of syphilis. It seems to us that the solution of this question is also the solution of the other. If truly there is one kind of chancre which never gives syphilis, as M. Ricord affirms, and if there is another kind which always leads to syphilis, when not at first properly treated, it is certain that there are two species of chancrous virus, a syphilitic one, and another which is not syphilitic.

Except the portion of these lectures on chancre in which there is obscurity and indecision relating to these doctrinal questions, this work is a model of clearness in the exposition of almost all the views of the lecturer. It contains many interesting cases as proofs of these views; and both teachers and practitioners will find in it much which may prove useful to them. It furnishes the reader besides the lectures, several additional documents of great interest, and particularly various statistics collected by M. Fournier, the intelligent pupil of M. Ricord, to whom we owe this work. E. B—S.

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### Art. XVIII.—*On Stricture of the Urethra.* By Henry Smith, F. R. C. S., Surgeon to the Westminster General Dispensary, formerly House Surgeon to King's College Hospital. London, 1857: pp. 280.

Mr. Smith intends his treatise, as he declares in the preface, to be strictly practical, and to be restricted almost entirely to the exposition of his own views on the various points connected with the disease of which it treats. He trusts

> "That the opportunities afforded to him as pupil, as house-surgeon, and as visitor in the wards of King's College Hospital for ten years, by experience among the numerous patients of two large public institutions to which he has been successively attached for eight years, by attending many cases in his own private practice, and by making use of the very valuable advantages offered to him in the capacity of private assistant to Mr. Fergusson for nearly ten years, will entitle his opinion to a favourable consideration."

Two hundred and twenty pages of the work are devoted to the treatment of strictures of the urethra. The author

> "Not having considered it necessary, in a treatise which is intended to be strictly practical, to dwell at any length upon the anatomy and physiology of the sexual organs;" and "some points in connection with the pathology of the disease have been but slightly noticed."

This work is a valuable one in many respects; some modes of treating stricture, particularly cauterization and external incision as recommended by

Syme, are very ably discussed; but it is not what the author intended to make it—a practical treatise. Or rather, the treatise would have been much more practical, if the author had entered more fully into the anatomy, physiology, and pathology of the urethra.

The author says himself, at the commencement of his description of the anatomy of the urethra, that, "in no instance of surgical disease is it more necessary to have a clear conception of the structure and relations of the parts, than when the practitioner is dealing with stricture of the urethra;" and yet he does not go beyond a description of the mucous membrane of the canal and of the muscular layers surrounding it, with a mention of the artery of the bulb, the dorsal vein, and a reference to the situation of the rectum. Not a word is said even in regard to the diameter of the curve made by the urethra in its course under the pubic arch; and we doubt whether there be any point of greater practical importance connected with the whole subject of stricture of the urethra; and it is certainly one, in regard to which—judging from the curvatures often given to catheters—the most erroneous ideas prevail. In connection with the organic muscular coating of the urethra, we expected to see it stated that Kölliker had discovered it, as well as Mr. Hancock, and we should have been glad to have seen an account of the method to be pursued for finding it, as we have repeatedly heard anatomists of no mean skill declare their want of success in its search.[1] The physiology of the urinary organs is not touched upon at all; there is not even a word said in regard to the condition of the walls of the urethra during life, or to its action during micturition.

Chapter II., headed "Stricture; its Nature and Pathology," treats of the pathological anatomy of stricture, its formation, its varieties, its most frequent seats, and its pathological effects. As usual, strictures are divided into permanent and spasmodic; a better division than that which we believe is adopted by Thompson,[2] of permanent and *transitory*. We say it is better, because it enables an author to find a place for *inflammatory stricture*, a kind of stricture which, if he could, Mr. Smith would like to deny the existence of (page 18) from the embarrassment he experiences on account of its being neither permanent nor spasmodic. Inflammation may close the canal, from congestion of the vessels and the outpouring of inflammatory products into the tissues around; and it may terminate by resolution, and leave the urethra as pervious as before. It is well, therefore, to place strictures, due to local vascular inflammation or congestion, causing temporary narrowing of those parts of the urethra, and those due to unwonted muscular action alone of the voluntary or involuntary fibres, under one class, as *transitory*.

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[1] As this is an important point in the anatomy of the urethra, we will give ourselves the plan to be adopted; it will be perhaps less out of place in a note than in the text. A fresh urethra is slit up, and pinned upon a board so as to put the flaps on a stretch. The mucous coat carefully removed, and then a firm substratum of elastic cellular tissue, a grayish layer is reached; this is the muscular coat. *Tease out* a small piece, in water, with fine needles. Hunter, in his work on the Venereal Disease, commences his chapter (VII.) treating of spasmodic stricture, by declaring the tissue of the urethra to be muscular; adding soon after, that the only proof we have of the truth of this is that it is subject to diseases which are peculiar to muscles in general. In the French edition of his works, a note of Ricord declares his *previsions* to be partly realized, as anatomy has shown the membranous portion of the urethra to be formed of muscular fibres; at the present day, they are fully realized.

[2] The Pathology and Treatment of Stricture of the Urethra, both in the Male and Female. Being the treatise for which the Jacksonian Prize, for the year 1852, was awarded by the College of Surgeons of England. By Henry Thompson, London, 1854.

Permanent strictures being the most frequent, the most troublesome, and those followed by the most serious consequences, this part of the subject is commenced by their consideration. The pathological alterations of the urethra which are found in the examination of these strictures are treated of in three pages, two of which are occupied with stricture from deposit *upon* the mucous membrane, as recently described by Mr. Hancock; only one page is devoted to the description of the changes which are found in and beneath the mucous membrane. Now it is upon a correct knowledge of these changes that anything connected with their treatment must be based; no knowledge can be more practical, and no treatise can be considered as practical in which they are neglected. Of late years much attention has been paid in England to this part of the subject of stricture, and our knowledge of it is become far more satisfactory. The time is not so remote as most persons may be inclined to believe, when impediment to the flow of urine was supposed to come from thickened humours fixed in the canal; from warts; from coagulated blood; from a stone. Thompson, for the preparation of the work we have cited, declares that he examined closely more than three hundred preparations for his pathological anatomy, and his chapter on the classification and pathology of stricture is most valuable. So highly appreciated is this chapter of Mr. Thompson, that we find a continental author offering it, translated of course, to French surgeons.[1] The only fault we have to find with Monsieur Pró is, that he only says that he went to London to study "pièces anatomo-pathologiques," and does not mention Mr. Thompson's book at all. His abilities as a translator are of the first order; so superior, that we will give a specimen of them to the reader, assuring him, moreover, that from page 50 to page 73 of the memoir, the translation is of equal fidelity.

> "What are the essential pathological elements of organic stricture? And what are the strictures in which the constriction itself is seated? Their consideration may be advantageously entered upon together. The first effect of inflammation upon the mucous membrane is a swelling or thickening of it, caused by engorgement of the vessels. Then exudation of an albuminous fluid takes place into its substance, and into the tissues beneath, making them œdematous, all which matter is readily absorbed under favourable circumstances; and so far we have the condition which exists in mere inflammatory stricture, one of the transient forms of the affection, because resolution readily follows, &c."—*Thompson*, page 58.

> "Maintenant voyons quels sont les éléments essentiellement pathologiques du rétrécissement organique, et dans quels tissues se trouvent ces altérations; nous croyons qu'il y-a avantage à traiter en même temps ces deux questions. Le premier effet de l'inflammation sur la membrane muqueuse consiste dans une tuméfaction ou épaisissement causé par l'engorgement des vaisseaux; puis on observe dans la trame même de la membrane, une exudation albumineuse qui s'étend aux tissues environnants, qu'elle rend œdemateux. Toute cette matière se resorbe assez vite dans des conditions favorables, c'est à dire dans les rétrécissement inflammatoires qui se terminent par resolution, &c."—*Pró*, page 50.

Mr. Hancock, who has done so much for the anatomy, both normal and pathological, of the urinary organs, and who is so well known in this country by the Lettsomian Lectures delivered by him, and published in the *Lancet*, on that subject, discovered that permanent stricture from false membranes within the canal, upon its free surface, is a common and frequent occurrence. In his Lectures he relates cases which show that the fact was only to be determined by the microscope; "the membrane was so identified with the mucous membrane, it seemed rather thickening of the membrane itself that caused the morbid appearances." In some cases a valve was formed by the false membrane, and the greater the pressure from behind, the more the valve was raised up, and the more the canal was closed. This condition of things probably existed in many of the specimens examined by Mr. Thompson, but the unaided eye being insufficient for its detection, it has been overlooked. This is a very interesting discovery, and an important one in the treatment of stricture.

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[1] Mémoire sur l'Anatomie Pathologique des Rétrécissements de l'Urèthre. Par José Pró. Paris, 1856.

As to the varieties of permanent strictures, Mr. Smith is not very decided. Of course they are more or less hard, more or less hemorrhagic, and more or less irritable; but to be clear in classification it is necessary to be clear in anatomy and pathology. We are much better pleased with the remarks upon spasmodic stricture: "A pure spasmodic stricture," he says, "is not to be denied, but in the majority of instances of so-called spasmodic stricture, there exists at the same time an organic narrowing of the canal, and the spasmodic contraction is an additional element, the result of some accidental irritation, local or general." In the majority of cases the spasmodic contraction is at the bulbous or membranous portion of the urethra, where the accelerator urinæ, the compressor urethræ, and the anterior fibres of the levator ani exert their action. Why, however, as sometimes occurs, the spasmodic action takes place in a portion of the canal where these muscles do not extend, it was difficult to explain until the whole canal was shown to be surrounded by organic muscular fibres.

In order to find the most frequent seat of stricture, Mr Smith examined 85 specimens in various museums of London: Bartholomew's, Cambridge, King's College, and the Hunterian. In 50 the stricture was either in the bulb or just in front of it; in 18, in the membranous portion, and in all but four of these the bulb was involved as well; and in 17, in some part of the straight or spongy portion, from the orifice to within an inch of the bulb. In only one case was there stricture of the prostatic portion, and that was in the shape of a broad membranous expansion! Thompson, in all the museums of London, Edinburgh, and Paris, could not find a single case of stricture in this region of the urethra.

It used to be considered by English authors, that strictures took place chiefly at the membranous portion. Civiale says, that "this inexact indication is owing to the fact that the membranous portion has been confounded by them with the point that separates it from the spongy portion."[1] The only way to fix upon the point affected is, not to trust to measurements from the orifice only, but to identify the contraction with the anatomical region of the urethra. The conclusions of Mr. Smith are undoubtedly correct; unfortunately he persists in speaking of the bulb as a region of the urethra, although he says himself, in giving the anatomy of the urethra, that it is well to consider the *bulb* as a continuation of the *spongy* portion (page 2). Mr. Thompson's examination of specimens was still more extended; he examined 320 strictures in 270 preparations, and dividing the urethra into three regions—one, comprising the junction of the spongy and membranous portions, one inch before and three-quarters of an inch behind, thus comprising the whole of the membranous portion; another, extending from this first region to within 2½ inches of the meatus, about 2½ or 3 inches in length; and a third, extending from the second region to the external orifice, he found that the first region contained 215 strictures, or 67 p. c. of the whole number; the second, 51, or 16 p. c.; and third, 54, or 17 p. c.

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[1] Mal. des Organes Génito-Urin., vol. i. p. 147.

Stricture, then, is most common at the point where we should expect it to be, namely, where the voluntary muscles cause spasmodic contractions of the canal, which, frequently repeated, would lead to organic contractions, where the urethra is in close relation with the anterior layer of the deep perineal fascia, where its form is such that instruments in unskilful hands are most likely to do harm; and again, and perhaps this is the chief reason, where gonorrhœal inflammation lasts with the greatest obstinacy. Hancock has thrown out a doctrine on this subject, which is somewhat curious. Strictures, he says,

> "occur most commonly at the junction of the bulb with the membranous portion of the urethra; for—setting aside the consideration, that this portion of the urethra is the spot of all others most acted upon in the different conditions of erection and relaxation of the corpus spongiosum, and that spot, consequently, at which we should naturally expect stricture or mischief to occur—if we turn to such affections in other parts of the body, we find that for the most part they seem subject to a general law—that strictures, when single and organic, taking place in canals possessed of varied dimensions, are commonly met with at those points where the larger portion of the canal merges into a smaller one, or *vice versa.* Of the œsophagus, almost always about the fifth cervical vertebra, where the pharynx merges into the œsophagus. Again, we find permanant stricture where the œsophagus joins the stomach, at the cardiac orifice; where the stomach joins the duodenum, or at the pylorus; where the sigmoid flexure of the colon joins the rectum; and at the lower part of the rectum where the dilated portion of the gut joins its more contracted termination. Likewise in the lachrymal apparatus, we find that constrictions mostly obtain where the lachrymal sac joins the *ductus ad nasum.* So, in the urethra, strictures mostly occur at that spot where the narrower membranous portion passes into the more dilated fossa of the bulb."[1]

The *effects* of stricture are well described at the termination of this chapter, and what is rather remarkable, without exaggeration. It seems to be a natural tendency of writers of monographs to exaggerate the frequency and importance of the affection of which they write; and never more so than when the affection regards the urinary organs. For instance, in his *Practical Observations on Diseases of the Prostate Gland*, on account of its being often affected in advanced life, Sir Everard Home says:—

> "From its frequent occurrence, perhaps we may be justified in believing that it is alluded to in the beautiful description of the natural decay of the body in the Bible, in the Book of Ecclesiastes, 12th chap., 6th verse, where it is written 'or the pitcher be broken at the fountain, or the wheel broken at the cistern,' expressive of the two principal effects of the disease, the involuntary passing of the urine, and the total stoppage."

An exaggeration of this kind, however, is harmless, and we are pleased to meet such a charming instance of the private interpretation of the sacred writings. There is, however, an exaggeration of the horrible, by many writers, in their descriptions of the effect of stricture, which may reasonably lead us to question their motives. One celebrated writer declares that "perhaps one-third of men pass more or less their life in the misery called retention of urine," and then proceeds to describe their misery in a way to rival the newspaper advertisements of charlatans. There is certainly in such cases the unworthy design of frightening patients into their hands, if they cannot win the esteem of respectable surgeons. Their motto is,

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[1] The Lettsomian lecture, by Henry Hancock, in Lancet for April 3d, 1852.

> "Flectere si nequeo Superos, Acheronta movebo."

Among these effects of stricture, we notice that dilatation of the canal, behind the stricture, is declared to be "by no means of frequent occurrence, and that in many instances of obstinate stricture there is no dilatation." This is contrary to the statement given by most authorities on this point. The American surgeon, who has written most extensively on these subjects, states it to be "one of the most frequent as well as most serious lesions consequent upon stricture."[1] We are inclined to think that Mr. Smith is wrong on this point, when he differs from the great majority of surgical writers. In another point, in which he agrees with all of them, the microscope shows him to be wrong. In speaking of the effect of stricture upon the bladder, all writers declare that its walls become thickened from hypertrophy of its muscular coat, on account of the increased action required to overcome the impediment. This thickening of the coats of the bladder, as well as the columnar appearance of the inner surface, is due, however, not so much to the muscular as to the cellular coat of the viscus; the microscope shows that these projections are not muscular, but are composed of elastic cellular tissue.

Chapter III. is upon the symptoms and causes of strictures. The symptoms of stricture are given with method and clearness, but if, in place of the arrangement he has adopted, locating the effects in one chapter, and the symptoms in another, Mr. Smith had made one chapter, entitled Pathological Effects and Symptoms of Stricture, it would have been better. Such an arrangement was particularly to be preferred in a work where it is desired to treat of these subjects without occupying any great space, for it would have avoided repetitions otherwise absolutely necessary. The main symptom or sign of stricture, the one afforded by exploration of the urethra, is considered in a subsequent chapter, the 5th, in which treatment by temporary dilatation is treated of.

Of all the causes of stricture, he believes gonorrhœa to be the most fertile. As to injections, he declares that it is much more reasonable to allege that they prevent the formation of strictures; adding, however, that when used in too great strength they may doubtless lead to stricture, and moreover, his belief that "in one or two of his own patients, a very strong injection of nitrate of silver had led to the production of the disease; but in these cases it acted very violently, producing severe pain and much hemorrhage." Next to gonorrhœal inflammation, injury of the urethra is, in his opinion, the most frequent cause of stricture. "Contusions of the perineum, caused either by a kick, by a cricket-ball, or by a bump upon the pommel of a saddle, or across a ship's yard-arm, are frequently attended with a laceration of the urethra to a greater or less degree;" and "certain changes necessary for the repair of this loss ensue, and the result is a cicatrix, and a contraction of the canal." Even when there has been no actual solution of continuity, but only a severe contusion of the canal, "a considerable amount of inflammation takes place, lymph becomes deposited around the urethra, and in this way stricture may be formed." In those cases where contusions of the perineum are ultimately productive of stricture, it not unfrequently happens that the symptoms are not witnessed until some time has elapsed; "weeks, months, or even years, may go by before the patient gets troubled with any difficulty in passing his water." Some very interesting cases are given as examples of these points.

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[1] A Practical Treatise on the Diseases, Injuries, and Malformations of the Urinary Bladder, the Prostate Gland, and the Urethra. By S. D. Gross, M.D., 2d ed. Phila., 1855.

External injury is not usually given as the cause of a large proportion of strictures, but we find Mr. Smith's opinion fully borne out by the table made by Thompson, and recorded in the work we have already cited. In 220 cases, the cause was

| | |
|---|---|
| Gonorrhœal inflammation in | 164 |
| Injury to the perineum in | 28 |
| Congenital | 6 |
| True inflammatory stricture | 8 |
| Cicatrization of chancres | 3 |
| " following phagedena | 1 |
| Poisoning by nitrate of potash, lithotrity, masturbation, of each one | 3 |
| True spasmodic stricture from irritation of rectum | 2 |
| " " " no cause assignable | 2 |
| " " " under acidity and alkalinity of the urine | 3 |
| | 220 |

In only three of these cases was the disease attributed by the patient to strong injections.

The remaining chapters of Mr. Smith's treatise on stricture, occupying nearly three-fourths of the whole work, are upon the treatment of this affection. They are replete with valuable information and judicious advice, and what is quite remarkable, when the subject treated of is considered, they are written in temperate language. We say when the subject treated of is considered, for it must not be supposed that the operation of Mr. Syme first called forth such abusive language, as the friends and opponents of that operation have been recently using. In the beginning of the century, though not so many books were written in England, yet their language was about the same, in regard to cauterization.[1] In France for many years the same thing has been going on, Civiale, Leroy d'Etiolles, Heurteloup, Maisonneuve, &c., have been using language almost, if not altogether as violent as any we have seen used in England. Some of the productions of M. le Baron Heurteloup are remarkable specimens of skill in abusing rival surgeons.[2] Of course all writers upon stricture have not been guilty in this way; but we noticed with pleasure the tone in which Mr. Smith has written, for he has been a party in several of the discussions that have recently occurred in England, and particularly in one that took place at the Medico-Chirurgical Society on the occasion of the reading of a paper by Mr. Syme, in which his method was exposed.

Previous to describing the modes of treatment in cases of stricture, it would have been well, we think, for Mr. Smith to have given some rules in regard to those in which it is proper to institute any treatment, for, because the canal has lost half a line or more of its diameter, or the jet of urine is more or less irregular, it is not necessary for the surgeon to interfere. It is only where a stricture continues gradually to become more narrow, or where it hinders and compromises the direct functions of the urethra and those of the organs with which it is connected, that it should be submitted to treatment.

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[1] See, for example: "A critical inquiry into the ancient and modern method of curing diseases in the urethra and bladder." By Jessé Foot, Surgeon.

[2] See, for example: "Rétrécissements de l'uréthre. L'Etat de la science dévoilé à l'occasion d'un nouveau procédé féroce, avec un court mémoire pour servir d'antidote. Par M. Le Baron Heurteloup," or "De La guérison immédiate des rétrécissements de l'uréthre, &c., et sur les effets dangereux des bougies," by the same author.

Though it is very necessary to combine other measures with the employment of instruments, in the treatment of stricture, yet the disease is chiefly a mechanical one, so to speak, and one to be remedied by mechanical means. The mechanical means invented for this purpose are innumerable, and the modes of treatment are altogether so many and so various, that we must judge either that an efficient mode is wanting, or that our present appliances are not rationally and systematically applied to suitable cases. Another thing to be noticed is, that stricture is one of the pasturages of quacks, as cancer, phthisis, &c., and we may reasonably judge that it is because it is a disease which regular practitioners often fail to benefit. A correct knowledge and proper treatment of affections of the urinary organs by surgeons would greatly diminish the number of quacks, for we believe that this want of success is generally owing to their ignorance of, and inability to properly apply the means at their disposal.

In the treatment of stricture two indications are to be fulfilled; the natural calibre of the canal is to be restored, at least so far as is consistent with the safety and comfort of the patient, and the canal is to be maintained in this condition afterwards. This second part of the treatment is one of indefinite duration, for, as in all the mucous outlets of the body, there is a disposition to recontraction when once the canal has been narrowed. So that in by far the greater proportion of cases of confirmed stricture, although by suitable means the original calibre of the canal may be restored, there is always a tendency for the stricture to return. For this reason, in his essay, Mr. Smith declares that he will never mention the term cure in reference to stricture.

The mechanical means invented for the treatment of stricture are, as we have said above, innumerable; they extend from the mild means of Bruninghausen, who reports to have cured patients, by having them to distend the urethra with urine, the meatus urinarius being closed while they endeavoured to expel it, to the means advised by Arnott, in which an empty bag was to be introduced behind the stricture, and then inflated and drawn forwards, a canula afterwards being pushed against the stricture in front, in which a circular knife was contained cutting the stricture out at one push.[1] All these means, however, can be classed under three heads—dilatation, destruction by chemical agents, and division by cutting instruments. Mr. Smith says:—

> "In the first place, then, we have *dilatation*, of which there are three modifications—simple dilatation, permanent dilatation, rapid or forced dilatation. Next, there is *cauterization;* and of this there are two methods, or rather, there is the employment of two different substances, viz., nitrate of silver and potassa fusa. Lastly, there is *incision*, under which somewhat comprehensive term we place several varieties which are practised by the surgeons of the present day: 1st. *Internal* incision, performed either from before backwards, or from behind forwards; 2d. *Incision of the stricture from the outside, or perineal section*, of which proceeding there are also two varieties. 1st. The section at the point of

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[1] In his "Treatise on Stricture of the Urethra, containing an account of improved methods of Treatment, with an appendix, &c." By James Arnott, London, 1819.

an instrument which cannot be passed through the stricture; and 2dly, the *section* performed upon a grooved instrument previously passed along the urethra into the bladder" (p. 62).

Of course, in addition to these mechanical methods general measures must be adopted, to allay the irritability of the system, and to correct the state of the urine; a tolerable account of these measures is given, here and there, in Mr. Smith's book. It is not so full as it should be, but more so than in very many treatises on the subject. In the most important work on this affection published in this country, one we have already referred to, in speaking of the treatment of stricture, the condition of the urine is not attended to at all; the only directions we find are "demulcent drinks should also be used; and there are few cases which will not be benefited by the exhibition of bicarbonate of soda, and balsam of copaiba." It is to be remarked also that those authors who neglect general measures, are those who advise the use of the harshest mechanical treatment. This is owing to the extreme to which Hunter went, and to the influence of his authority; he was not willing, in permanent stricture, to make use of any means but local applications, as he declares at the very outset.

Before describing the manner in which treatment by dilatation is to be pursued, Mr. Smith gives an account of some of the various materials of which bougies and catheters are constructed, and of the various forms given to them. For reasons of safety and efficiency, he prefers the use of wax bougies, until the urethra has been so far dilated as to admit a No. 4 or 5, when he commences to use metallic instruments. A hollow instrument has the great advantage of revealing, by the flow of urine, the situation of the instrument; the curve, Mr. Smith says, should be "moderate, neither too small, too abrupt, nor too extended;" a conical point he objects to because the instrument may more easily penetrate lacunæ, and more readily tear the urethra. Moreover, if there be more than one stricture, it will be difficult or almost impossible to know whether the instrument be stopped by the second obstruction or not; "for, in consequence of the diameter of the catheter increasing from the point, it may be prevented advancing by the first stricture only."

A surgeon, well acquainted with the management of instruments in the urethra, will generally prefer an inflexible instrument to a flexible one; indeed, we think he will only choose the latter when the obstacles opposing the entrance are of such a kind that it must be allowed to worm its own way. Of all inflexible instruments, the one producing the least abrasion of the urethral mucous membrane is a perfectly well polished metallic sound. As a general rule, they have too large a curve, from a mistaken idea of the natural curve of the urethra, which Arnott, for instance, says has a diameter of six inches; the "moderate curve" of Mr. Smith is not sufficiently precise. The natural curve of the urethra commences at an inch and a half anterior to the bulb, and from this to its termination in the bladder, forms an arc of a circle three inches and a quarter in diameter, the chord of the arc being two inches and three-quarters, or rather less than one-third of the circumference. It is also a matter of importance to have the axis of the point of the instrument at right angles with that of the shaft, for then the surgeon can best judge where the point is going when hidden in the urethra. The gum-elastic catheter is a valuable instrument, for it may be used as flexible or inflexible by reason of the stiletto; it may be used as a straight instrument, or any form whatever may be given to it; and, moreover, should it be requisite to leave the instrument in the bladder, by withdrawing the stiletto the patient is free to walk about.

A separate chapter is devoted to each form of dilatation; that is, temporary and permanent. As this is the method which undoubtedly should be used as the rule in treating stricture, others being used only, if ever, when the nature of the obstruction is such as to make it impracticable, or when the urethra will not endure the repeated contact of instruments, it is impossible, almost, to study it too carefully. The advice contained in these chapters is excellent, and we doubt whether the surgeon need often have recourse to other means if it be faithfully followed. We remark here again the attention paid to constitutional treatment, for we believe that its neglect has often caused the abandonment of dilatation and the adoption of other and dangerous measures. As Mr. Smith's preceptor, the celebrated surgeon to whom his work is dedicated, teaches—

> "In the great number of these troublesome cases (of excessive irritability), it will be found that the general condition of the system is at fault, and it is highly necessary that the surgeon should find this out, and, by the administration of proper remedies, endeavour to correct the morbid state."[1]

Very many instruments have been invented for dilating stricture, but we doubt whether there is much use in being acquainted with them, and Mr. Smith has done well in his practical treatise in saying nothing about them. Their inventors forget that the subsequent tendency to contract is strong in proportion to the rapidity with which dilatation has been effected, so that, in reality, the patient is no gainer thereby, and, moreover, that sudden dilatation is apt to be followed by violent symptoms. With some of these instruments, as, for instance, Arnott's tube of oiled silk, described in the work we have before cited, page 96, they may be pronounced to be useless merely because they can be used. If such an instrument can be introduced into a stricture, we can do without it. Here, as in almost every surgical disorder, it is the surgeon's judgment and manual dexterity that make the excellence of the instrument, and not the strangeness of its mechanism.

At the commencement of Chapter VII., which is upon the treatment of stricture by caustics, Mr. Smith says:—

> "I have hitherto considered those methods of treating stricture which are usually adopted in this country; and it has been shown that *dilatation*, either temporary or permanent, is, for the most part, only suitable in those cases where an instrument of some kind can be introduced through the stricture without force; and the majority of cases are those where the obstruction is not *impermeable* to an instrument when cautiously and patiently used. Still, every now and then, we shall meet with an instance where, either from the patient's fear or neglect, the disease has been allowed to become so bad that the surgeon cannot pass any dilator without exerting an unwarrantable amount of force. In the mean time, the patient is suffering most severely from the effects of his malady, and is urgent for relief. In such a case, it is necessary to employ some other method by which the contraction may be overcome, and the mischief which is going on be stayed in its progress. Then, again, it has been seen that cases are met with in which, although a small instrument may be passed, there is such a difficulty in carrying on dilatation, either from the density or irritability of the stricture, that the surgeon is compelled to resort to some other remedial means which either prepare the way for dilatation or assist this process when once it has been commenced. Fortunately, these means exist in the form of *caustics*."

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[1] Fergusson, Clinical Lecture in Med. Times and Gazette, 13th March, 1852.

We cite the whole passage in order that it may be clearly understood with what object Mr. Smith employs caustics. Hunter, who revived the use of caustics in the treatment of stricture, employed it chiefly in cases where he could not introduce a bougie at all, and laid it aside so soon as a small one was admitted. Hunter, be it remarked, lays it down as an axiom that when a bougie can readily pass, there is no necessity for the use of any other method. Sir Everard Home extended the application of caustic to all strictures, making its use the rule, and that of simple dilatation the exception. The caustic used by Hunter and his pupil was the nitrate of silver. Mr. Whately, in the commencement of the present century (1804), in a work entitled *An Improved Method of Treating Strictures of the Urethra*, first advocated the use of the potassa fusa. The plan of Mr. Whately was not favourably received at the time, but of late years it has been much made use of in England. Mr. Wade has, perhaps, been as instrumental as any other surgeon in this revival. Some of the cases of cure reported by this surgeon are certainly very remarkable; one is almost inclined to coincide with Mr. Syme, who thus speaks of them at page 53 of his treatise: "On a whole, it seems more reasonable to conclude that, in the cases of alleged cure by caustic, there was no real stricture in existence, than to suppose that so improbable or rather impossible an achievement had been accomplished." Mr. Smith, as seen by the citation given from his book, makes use of caustic when no instrument will pass, when the irritability is too great to allow of the frequent passage of an instrument, and when the density is so great that dilatation must be assisted. The use of the nitrate of silver occupies one page and a half; the rest of the chapter, or thirty-five pages, is devoted to the use of potassa fusa. Nitrate of silver he has not used to any great extent, but he "has seen enough of it to know that it may produce very excellent effects in allaying irritability." The potassa fusa is a far more powerful agent, and, therefore, a far more dangerous one. Mr. Smith would have it used as an agent, "producing actual destruction of the thickened tissue itself," though he declares also that "its beneficial action on stricture must be mainly attributable to its exerting an amount of irritation sufficient to produce actual absorption of the thickened tissue." The application is made by introducing into the extremity of a bougie a piece of the inside of a stick of *potassa fusa*, about the size of a large pin's head, pressing the edges of the cavity around it, so that it be but slightly prominent, and then passing the bougie down to the stricture, against which it is lightly pressed for the space of a few moments or more, according to the nature of the case. Of course, the extremity of the instrument is previously dipped in oil, which, although it unfortunately, as we think, does not always render the potash innocuous by forming a soapy compound, yet must very much diminish its action. The accidents which may result from this application are *retention of urine, hemorrhage, false passages, and perineal abscess.*

Mr. Smith relates a number of cases occurring in his own practice to show that a stricture may be opened up or destroyed for a time at least by the use of this caustic. Also one case to show that, "even after a stricture has been well opened up by it, there is just as great a chance of the stricture returning again as after any other kind of treatment if the precaution is not taken to pass a bougie every now and then."

He concludes the chapter on cauterization by saying that *potassa fusa* should be considered chiefly in the light of an adjunct to dilatation, so that the surgeon should not be led to trust to it alone, or to be led into using it too frequently. "Above all things, it is necessary to bear in mind that caustic, and especially potassa fusa, is not to be used without *extreme caution*, either, indeed, as regards its actual application or the selection of the cases for its employment."

We have a good deal of confidence in the prudence of Mr. Smith, as a surgeon, but we believe that in the use of caustic he goes too far. A stricture of the kind described by Mr. Hancock, where there is a false membrane upon the free surface of the urethra, or a stricture accompanied by ulcerations, or one depending upon vegetating fungosities, would get well sooner by combining cauterization with dilatation, than by the latter proceeding alone, if the caustic could be exactly applied upon the diseased surface, and any extension of its action over the healthy tissues prevented. Again, it would be necessary to diagnosticate these pathological conditions. But if cauterization be employed, to destroy cicatrices, which other cicatrices, then of greater extent must replace; if it be applied upon hard, callous strictures, in which resolution is no longer possible, far from ameliorating the affection, it is aggravated, and a cure, which other means more apppropriate might have obtained, is prevented.[1]

Mr. Smith's experience with the potassa fusa has not been very great, and we are inclined to think that his opinion as to its application in stricture may undergo a change. In 1832, Mr. Benjamin Phillips published a *Treatise on the Urethra; its Diseases, especially Stricture, and their Cure*, in which he advocated strongly the use of the nitrate of silver. Eleven years afterwards, in the *Medical Gazette*, for December, 1843, he states that a larger experience has satisfied him that the conviction was not well founded. "I believe," he says, "we know no means of effecting a permanent cure of advanced cases of stricture; but I think the best means we possess is the prudent employment of dilatation. I apprehend the good derived from the use of caustics is owing to the modification of the sensibility of the canal, which has allowed of a more unreserved use of dilating bodies, than could have been had without it." It is impossible, Thompson declares, to obtain information respecting the subject upon which greater reliance could be placed

In this country, on the subject of cauterization, Dr. Gross writes that, in his judgment, it should be restricted to cases "in which the stricture, without being very tight or extensive, is of a firm, gristly, and resilient character, and in which there is an undue amount of morbid sensibility of the mucous membrane of the urethra. The nitrate of silver acts mainly as a sorbefacient, rousing the absorbent vessels of the part, and inciting them to the removal of the adventitious deposit." This is surely as far as it is proper to carry the use of cauterization, but unfortunately, notwithstanding the advice of the American writer, caustics are extensively used as destructive agents in this country, and, as it requires but a limited experience to discover, with very distressing consequences.

With Chapter VIII., Mr. Smith commences the consideration of the treatment of stricture by *division with the knife*. He makes no reference whatever to the punctures, filings, and scarifications, which have been, and still are, recommended from time to time, and discusses only *incisions*, made either from within outwards, when they can be made from before backwards, or from behind forwards; or from without inwards, when they can be made either upon an instrument previously introduced into the canal, or without.

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[1] This is the opinion of Ricord, as given in the French edition of Hunter's Treatise on Syphilis, Paris, 1845, page 320.

The incising of the urethra, from within outwards, is first studied by Mr. Smith, under the title of *treatment by internal section.* The chapter he has devoted to this is far from being a satisfactory one; indeed, we are unable to conclude from it what his opinions are. We believe, however, that he holds it to be a dangerous operation, particularly when performed from before backwards; sometimes to be one speedily fatal, and, moreover, one more speedily followed by a return of the disease than dilatation. No description is attempted of the host of instruments which have been invented, by Civiale, Leroy, Ricord, Maisonneuve, etc. etc., for the purpose of making these incisions. One of the men we have just mentioned, has alone described and invented so many, that one of his enemies, in a work he has published, likens him, with a grossness of language quite usual to him, to certain women "who are always conceiving and never bringing forth, or, at least, bring forth before their time, badly formed embryos." English surgeons do not seem, at least so far as we can judge, to have ever been much in favor of the *internal section*, as Mr. Smith calls it. Mr. Stafford's work, *A Series of Observations on Strictures of the Urethra; with a new Mode of Treatment*, published in 1828, by its strong advocacy of this means turned their attention to it, but it met with no permanent favour.

It is remarkable how soon some modes of treatment, of wonderful safety and success, and sometimes supported by high authority, have fallen. In 1852, the Imperial Academy of Medicine, in Paris, *crowned* the work of Reybard, entitled *Traité Pratique des Retrécissements de l' Urètre*, and bestowed upon him the great Argenteuil prize of 12,000 francs. The committee of the Imperial Academy was composed of MM. Ricord, Robert, Roux, Gerdy, Bouvier, Huguier, Laugier, Larrey, and Grissolle. Their report says, "en résumé, l'expérience et le raisonnement sont d'accord pour classer l'opération de Reybard parmi les conquêtes de la chirurgie moderne."

The operation of M. Reybard consisted in dividing, by means of an instrument of his own invention, the whole thickness of the urethral walls, not only at the stricture, but an inch before, and an inch behind: the wound usually is about three inches in length. In order to prevent union by first intention a full-sized bougie is to be passed twice a day for at least thirty or forty consecutive days. "The production of granulations being thus insured, a piece will be formed in the urethra to permanently enlarge it."

In May, 1855, this same operation of Reybard was discussed in the Société de Chirurgie; M. Ricord, one of the committee who gave the prize, as will be noticed, said that it was not given for the *affreux instruments* of Reybard, that he had voted for everything in his book, except for urethrotomy; adding "that when instruments can be introduced the patient can urinate himself, and this should satisfy the surgeon, and be enough for the patient." M. Debout had sought what the surgeons of Lyons, where Reybard resides, thought of the practice, and, "to their knowledge, it had afforded deplorable results in the hands of the inventor himself, and of those who had imitated him. Long ago they had completely abandoned urethrotomy."[1] Three years were sufficient to show that an operation, proclaimed by a committee of as competent men as the world can produce, to be "one of the conquests of modern surgery"—shown to be so "both by reasoning and by experience"—was frightful and followed by deplorable results.

On the 14th May, 1855, a memoir was read to the Academy of Sciences, in Paris, by M. Maisonneuve, upon "a new method of catheterism and its application to the radical and instantaneous cure of strictures of the urethra." By this method, we are told, that "instead of an operation embarrassed with complicated instruments, and above all, with long and painful preparatory and consecutive treatment, we have now but a simple and rapid operation, which can be practised completely in a few moments, and which, allowing of the easy use of chloroform, causes no pain to the patient." This is the operation: a fine bougie is introduced into the urethra, to which a grooved urethrotome is screwed, and pushed in; the bougie conducting it, and remaining coiled in the bladder. In the groove of the urethrotome cannelé, a small cutting blade is introduced and pushed from one end to the other, so as to divide all the strictures at once. The urethrotome cannelé is then withdrawn, and the *urethrotome caché* is introduced without difficulty. When the *urethrotome caché* is in, the bascule is pressed upon so as to make the blade project, and the instrument is withdrawn, so as to cut at once and deeply all the strictures. Then, to be sure that the operation has effected its object, a full-sized metallic bougie is introduced into the urethra, and at once withdrawn. This done, the patient is left alone; he immediately urinates in a full stream and almost without pain; the slight smarting (!) which takes place at the moment of the emission of urine, disappears at the end of a few days. M. Maisonneuve, from motives of prudence, engages his patients to remain a few days in bed, to take a bath and demulcent drinks, but sometimes they have gone at once to their ordinary mode of living, without the slightest inconvenience resulting. This pretty fiction of M. Maisonneuve perished far more rapidly than that of Reybard. Ficta omnia celeriter, tanquam flosculi, decidunt, nec simulatim potest quidquam esse diuturnum.

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[1] The discussion is published in the Gazette des Hôpitaux, May, 1855.

All operations, for the relief of stricture, by incisions, whether they be performed from without inwards, or from within outwards, upon a conductor, or without one, from behind forwards, or from before backwards, have the same basis. They are all performed upon the supposition that by dividing a stricture in which the deposit is very dense, or where there is great irritability, and by not allowing the incision to unite by first intention, that the stricture will be cured. The operation by internal incision has been performed in every variety of ways, and by men of the greatest skill. So far as the cure of the affection is concerned, the result has been unfavourable, for the stricture gradually, and we believe invariably, returns. Moreover, experience shows that it is attended with risk to the life of the patient. Under these circumstances, a prudent surgeon will not perform it.

Another method of treating stricture, that by external incision, remains to be considered. The external division of the diseased canal has always, we might say, been resorted to in certain severe and intractable cases, but within the past few years the attention of surgeons has been particularly called to it. Until within this time it was a proceeding limited entirely to cases of *impassable* stricture. It must not be supposed, however, that simple impermeability to an instrument was supposed to justify what is now called by some the *old operation* of perineal section. It was only performed when a considerable extent of the urethra was so contracted that the urine only passed in drops, and the irritation, local and general, was wearing away the patient. Or, again, when the urethra had given way behind a close stricture, and infiltration of urine and suppuration had taken place, and the patient thereby brought into such a state that his life is endangered. The chapter in which Mr. Smith treats of this operation is quite a remarkable one, for it is rare to find so much good advice given with so much clearness, and so forcibly illustrated by examples.

Of late years, however, the operation of laying open the urethra in the perineum has been urged in cases of permeable strictures. To Professor Syme, of Edinburgh, belongs the credit of having brought it prominently before the profession. It is an operation which has been extravagantly praised and violently condemned. After studying carefully all that has been written on both sides of the question, we think every one will reach the same conclusion as that reached by Mr. Smith, and which has prevented him from ever performing the operation.

> "That it has appeared to him to be unnecessary to subject a patient to an operation which may destroy life unless a very pressing emergency exists; and this, in his opinion, does not obtain, except under rare circumstances, so long as an instrument can be passed through the stricture."

The July number of this *Journal* for 1853 contains a report of the paper read by Professor Syme before the Medico-Chirurgical Society of London, and in which is a full description of the operation. At that time he stated that he had performed the operation upwards of seventy times without any fatal or alarming consequences. The work of Mr. Thompson, to which we have already referred, testifies strongly in its favour; he gives a list of one hundred and fourteen cases, of which only four were fatal; and he declares that in these four cases death was not caused by any accident peculiar to the operation, or necessarily connected with it, but by one which is known to attend incisions and lacerations of any kind; the cause of death, he says, was undoubtedly pyohæmia.

On the other hand, Mr. Wade declares that, in London, the operation is nearly as fatal as the operation of lithotomy; and, as to the ultimate effects, the stricture returns with nearly its original severity. The editor of the *Lancet* (3d September, 1853), writes thus: "In a word, we consider what is called Mr. Syme's operation for the cure of stricture to be the greatest opprobrium of surgery of the present day. Any surgeon who destroys the life of a patient by the performance of that operation ought, in our opinion, to be indicted for manslaughter." Words are insufficient to express Professor Lizars' reprobation of the operation, and, in his work, plates are given to show the "lamentable condition" of several patients after the perineal section.[1] In Great Britain, it seems to have been impossible to write coolly and dispassionately on the subject of Professor Syme's operation. In the *Archives Générales*, 4th Series, vol. xxix., is a paper upon it, with a review of English works on the subject, by Dr. Follin. He has found, and he is a man of great industry and accuracy, that the mortality of Syme's operation is one in five. "Hence," he adds, "it must only be proposed in excessively rebellious cases, and which threaten to become complicated with serious accidents."

There are many points connected with Mr. Syme's operation, which, though of much interest, we pass by without mention. There is one thing, however, we would wish to refer to, for it is connected with many other operations, as well as with that particular one of which we are writing. Professor Syme first performed his operation because his patient "protested that life was not desirable under the torment of his complaint," and demanded relief, "no matter at what expense of pain or risk of danger." Now we hold that the responsibility of an operation always rests upon the surgeon. It is he who is to judge as to the propriety of performing an operation, and the protestation of a patient, or of a patient's friends, as is sometimes the case, as to his weariness of life, should not influence the surgeon in his decision. The risk of danger can never be put aside, and it is this which is to decide the surgeon, when his interference is sought; if the danger attending his attempts to relieve be greater than that attending the disease, the surgeon should refuse to operate. When life is threatened, and death without his assistance is sure and imminent, he cannot act too daringly; but no matter how miserable and loathsome life may be, merely because it is so, the surgeon has no right to stake it upon the success of a dangerous operation. There are, of course, circumstances when life should freely be risked, for there are things compared to which life must be held as nought; but never can this be done, because it is wearisome, never, because it is "not desirable." There are cases where the surgeon must be resigned to palliate; and the patient to endure his suffering.

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[1] Practical Observations on the Treatment of Stricture of the Urethra and Fistula in Perineo, 3d ed., by John Lizars, Edinburgh, 1853.

The 11th chapter, and the last, of Mr. Smith's work is upon the treatment of spasmodic stricture and retention of urine. As it is, however, chiefly with reference to the treatment of permanent stricture that we have undertaken the examination of his work, we shall go no further. We will only say that, like the other chapters of his book, it contains much useful advice.

W. F. A.

# BIBLIOGRAPHICAL NOTICES.

Art. XIX.—*Reports of American Institutions for the Insane.*

1. *Of the Central Ohio Lunatic Asylum for* 1857.
2. *Of the Southern Ohio Lunatic Asylum for* 1857.
3. *Of the New York City Lunatic Asylum, for the year* 1856.
4. *Of the Bloomingdale Asylum, for the year* 1856.
5. *Of the Vermont State Asylum, for the fiscal year* 1856–7.
6. *Of the Western Lunatic Asylum, of Virginia, for the two years ending on the* 30*th September*, 1857.
7. *Of the Retreat, at Hartford, for the fiscal year* 1856–7.
8. *Of the New York State Lunatic Asylum, for the year* 1856.
9. *Of the Massachusetts State Lunatic Hospital, at Worcester, for the year* 1856.
10. *Of the New Hampshire State Asylum, for the fiscal year* 1856–7.

If there be any of our readers who have followed us, in our notices of the reports of the institutions for the insane in the United States, during the last fifteen years, they will probably recollect that, more than once, we have seized an occasion to express our admiration of the beneficent and nobly liberal spirit with which the State of Ohio first stretched forth her hand to shelter, to restore, and to save those unfortunates among her children who suffer from mental alienation. Of all the sister States of this Union, she was the first perfectly to act the Good Samaritan, by literally taking her afflicted *protégés* to her own house, and there gratuitously ministering to their wants. In plain and practical terms, she, first of all, paid from her own purse the bills of all the current expenses of her Asylum for the Insane. Year after year that institution pursued its progressive course, flourishing under her fostering policy, and under the able administration of Dr. Awl, its *comparatively permanent* superintendent.

It is now some six or seven years since it became evident that the machinery of the Asylum at Columbus was not working smoothly. Those evidences became more and more manifest as time progressed, and, since the opening of the two new asylums—at Newburg and Dayton—have been so conspicuous in the three institutions, that "he that runs" could not fail to read them. Officers have been compelled to resort to novel expedients for raising the funds necessary for the current expenses of the establishment under their charge. Superintendents, like the leaves of most of their forest trees, have been *deciduous*, falling, and giving place to others, in some instances oftener than the popular change of almanacs. A law, at one time, has been enacted, by virtue of which, "at one fell swoop," all the principal offices not only of the asylums for the insane, but of the other State charitable and benevolent institutions as well, became vacant. At length, in the reports for 1856, from the asylums at Columbus, Newburg, and Dayton, we had a picture, simultaneously drawn, of the glaring deficiencies and defects of those three establishments; a picture which was in part transferred to our notices of those reports.

Effects so general cannot spring from a cause which, in its origin, is specific to any one of the institutions. An influence so pervading throughout the ramifications of a philanthropic scheme, must be seated near the centre whence issues the vitality of that scheme. Hence, when we have inquired—as we *have* done more than once—for the origin of the difficulties at the Ohio institutions, we have not been surprised by the answer—"Politics." We were prepared to place confidence in this answer by previous observation in another State. We had seen the principal offices in benevolent institutions filled and vacated without the least reference to the special fitness or unfitness of the candidate and the incumbent. We had seen many and mournful evidences of carelessness, inattention, and heedlessness of duty, upon the part of administrative officials, and it has appeared to us that such are the inevitable results of a connection of philanthropic institutions with the partial and unstable policy of partisan politics, whereby the true interests of those establishments, and the welfare of their inmates, are lowered to a position of secondary importance. Under these circumstances, and with these views, we have believed it right, when reviewing the reports of latter years from the Ohio asylums, freely to express our opinions, perfectly willing that they should pass for just what they are worth, and no more. If those opinions be erroneous, we are open to conviction of our error. If we have been misinformed in regard to the source of the various novelties, eccentricities, difficulties, and defects in the official departments, the management, and the *material* of those asylums, we shall be glad to be corrected.

Hitherto we have received reports for 1857 from but two of the Ohio asylums. In the perusal of these, we have been induced to believe that a better day has dawned upon those institutions. We here have unmistakable indications of a strenuous effort, upon the part of all whose efforts are necessary to the result, to elevate them to the rank which they ought to hold among their sister institutions in other States. We joyfully hail the auspicious omen, and look forward, not indeed without anxiety, for the fulfilment of its promise.

1. From the report by Dr. Hills, of the Central Ohio Asylum, we extract the following statistics:—

| | Men. | Women. | Total. |
|---|---|---|---|
| Patients at the commencement of the year | 102 | 121 | 223 |
| Admitted in course of the year | 97 | 98 | 195 |
| Whole number " " | 199 | 219 | 418 |
| Discharged, including deaths | 80 | 79 | 159 |
| Remaining at the close of the year | 119 | 140 | 259 |
| Of those discharged, there were cured | 52 | 59 | 111 |
| Died | 21 | 11 | 32 |

"The general health of the institution during the past year has been very good. The exceptions to this fact are chiefly in the occurrence, during the last winter and spring (1856–7), of a number of cases of erysipelas; and, during the summer, a number of dysentery. The former prevailed to a considerable extent during a few months, but the cases were very amenable to treatment; that which invariably afforded prompt relief being iced water applications, diligently applied. The attacks were mostly about the head and face, though some were elsewhere, in the seat of wounds, or other localities."

The proportion of recoveries, from mental disease, is very large. Dr. Hills attributes this in part to the greater number than usual under treatment, and in part to other causes, of which "one of the most prolific is the greater amount of occupation given to the mind and hands, in a variety of useful labours. * * * * The number employed during the past season has been vastly increased, oftentimes numbering thirty, forty, or fifty (men), in parties of from three or four to ten or twelve. With recent or curable cases the convalescence has oftentimes been immediate and rapid. The healthfulness in that class has also been apparently increased, as not a death, or serious case of illness, with only one exception, has occurred among those that habitually laboured in the open air. While the above number of males have been occupied with suitable manly employment, an equal or greater number of females have been engaged in pursuits to which they are adapted. Thus has the asylum oftentimes presented an appearance of bustle and activity, both without and within, that precluded the possibility of many being considered as drones."

"All public days are properly observed. * * * * The fourth of July was an eventful and ever-to-be-remembered day. The asylum was then literally evacuated, there being 225 patients gathered at one time in the grove, for an old-fashioned celebration. The ceremonies were similar to those of most other assemblies convened upon our national holiday."

As our last notice of this asylum exhibited, in the language of its report, some of its *material* defects, it is but fair that some of the *material* improvements of the past year be here recorded. A new barn, forty by fifty feet, has been constructed, and the old barn newly covered, inclosed, and "the interior fitted up in the most commodious manner." A brick edifice, "eighty feet long, thirty feet wide, two stories high, with a side wing one story high, and fifty feet long by twenty feet in width," has been erected for a boiler-room, engine-room, pump-room, wood-house, and carpenter shop. The apparatus for supplying the buildings with steam, hot water, and cold water, has been extensively repaired and improved. The "old lodge building" is nearly completed, in its conversion into a green-house—"the work being in a large share done by the patients." "Much has been done toward getting the front grounds into better order, with carriage drives, walks, arbours, &c. About one mile of carriage drive has been laid out." A fountain has been placed upon the lawn in front of the main building, and the hobby of the present day, an *aquarium*, commenced. "In the interior much has been done to increase the comfort and gratification of the patients. Many more of the ladies' bed-rooms have been carpeted; some of the halls have been repainted; a few pictures have been placed upon the walls; and additional furniture has been supplied." A sofa and rocking-chairs have been put into each of the front halls of the female department, and a dozen substantial settees into the wing-halls. "For the first time in many years the institution is free from debt."

Dr. Hills, when writing of his patients, says: "Even election-day brings forth the ballot-box in the several 'wards.' Fearing that our 'returns' have not been received, it may be proper to say that *there was a small gain in each ward.*" It is to be hoped that, as the doctor has got partisan politics fairly into his wards, he will, in future, be enabled to keep it there, lest it again intermeddle with the organization and the official staff of the institution. In the Board of Trustees of one of the American asylums for the insane, there was, a few years ago, a conscientious, but a very ready-witted member of the Society of Friends. The Board were one day deliberating upon the proper measures of moral treatment to be introduced among the patients. Among other things, *dancing parties* were mentioned. Several of the members having expressed their approbation of them, one of the gentlemen, turning to the "Friend," said—"But perhaps Friend M—— will object to them." "*O not at all, not at all,*" replied the "Friend," "*a mad-house is exactly the place for dancing.*"

2. The report for 1857, by Dr. McIlhenry, of the Southern Ohio Lunatic Asylum, shows that he is not only zealously studying the disease to the treatment of which he has been called, but that, in this study, he has "got hold of his pitcher by the right handle." His elaborate analysis and classification of the cases treated, manifest a disposition to make a scientific use of the materials accruing to him, as a necessary consequence of his position.

| | Men. | Women. | Total. |
|---|---|---|---|
| Patients in the Asylum November 1, 1856 . | 69 | 64 | 133 |
| Admitted in course of the year . . . | 74 | 78 | 152 |
| Whole number " " . . . | 143 | 142 | 285 |
| Discharged, including deaths . . . | 66 | 58 | 124 |
| Remaining, November 1, 1857 . . . | 77 | 84 | 161 |
| Of those discharged, there were cured . | 44 | 33 | 77 |
| Died . . . . . . . . . . | 7 | 6 | 13 |

*Causes of Death.*—Mania 3, consumption 2, decay from old age 1, carcinoma of brain 1, gangrene of lungs 1, hydrothorax 1, hypertrophy of heart 1, valvular disease of heart 1, apoplexy 1, typhoid fever 1.

"During the entire season we have been exempt from not only the diseases incident to our neighbourhood, but from any of those special maladies which frequently find their way into hospitals and crowded institutions."

"The house has been full to repletion throughout the entire year. One hundred and forty patients are as many as ever, at one time, should be crowded into our halls. * * * * The average throughout the entire year has been about one hundred and fifty."

From Dr. McIlhenry's remarks upon various topics in relation to insanity, we make the subjoined extracts:—

"Every day's experience among the insane more fully demonstrates to me not only the necessity of providing them with abundance of good food, but of allowing many of them a free indulgence in the use of such food. It is a disease that not only has a tendency to exhaust the system, but it has a strong disposition to impoverish the blood, and vitiate, to some extent, all the secretions. Nothing, therefore, can so well supply this deficiency, and correct those morbid tendencies, as good substantial food, and a sufficiency of it.

"In a great measure, we have abolished from the discipline in this institution the restraint system; depending upon moral and intellectual action to control our patients. It is true that we occasionally have to so confine the hands of some that they cannot injure themselves or others; but in nine-tenths of our cases even this restraint lasts but a short time. By kindly care and culture, they soon learn to conform to reasonable rules and regulations, without fear or coercion.

"In the care and treatment of the insane, I am fully convinced that the nearer we approach a family relation, the better. It is an easy matter to *keep* them; but there is another consideration, much more important, devolving upon those having them in charge. Socially, they have wants which suffer, and will finally die out by confinement, if not properly and timely cared for. The flagging energies of their minds must be supported by a proper cultivation of kindly feelings; and their whole mental system must be kept alive by that familiarity and frankness which, where properly applied, constitute the basis of true health and happiness. It is not the best class of patients who demand from us the most attention. They are better able to make known their wants, and do much towards taking care of themselves. But it is those who, perhaps, when admitted, or from long-continued insanity and neglect, have sunk into almost hopeless dementia—their minds little else than a blank, their physical energies often not sufficient, alone, to produce locomotion. By persevering efforts and discipline, it is sometimes astonishing to witness the change which takes place in such cases. From months of continued depression of mind, you will have the satisfaction of witnessing such persons not only brightening up, and being much improved, but occasionally they will return to an entire healthy mental condition. We have had two recoveries from this state of mind take place in this institution: one who had been insane two years, and who scarcely ever spoke; the other, whose insanity existed nearly as long, and who never uttered an audible word for nine months, and who never moved from her seat without compulsion, and never ate a mouthful only as she was fed. Both are now, after an absence from the institution of one year, remaining well, and able to attend to their ordinary duties."

In amusements, "it is mostly through the eye and ear that melancholy and demented patients can be reached. It is in such cases that music and dancing perform an admirable part. The power of music on such minds must be seen to be fully appreciated. The physical effect alone of dancing, upon persons thus affected, by arousing the sluggish and, in many cases, almost dormant capillary circulation, is of immense value; besides the stimulating effect produced upon the mind by such exercise."

It is stated that, of the 152 patients admitted in the course of the year, 36 had the suicidal propensity. Twenty-six attempted self-destruction; the remaining ten merely threatened it. In our experience, we never found but one patient in whom the propensity really existed that ever threatened to commit suicide. Such threats have not unfrequently come from patients who would be among the very last to put the threat into execution. Of the 26 abovementioned who attempted self-destruction, 30 attempts are recorded; they were 9 by cutting, 8 by submersion, 3 by suspension, 3 by leaps from windows, 2 by shooting, 2 by strangulation, 1 by burning, 1 by starvation, and 1 by poison.

Of the 381 patients received since the opening of the asylum, it is asserted that a hereditary predisposition to mental disorder existed in 111, or 29.13 per cent. But from a table showing the precise relationship, to 91 of these patients, of their kindred who had been insane, it appears that in only 41 cases were the direct ancestors so affected. In all other instances it was collateral relatives. It need not be remarked that it is not fairly to be inferred that a man is hereditarily predisposed to insanity, because he had a "cousin by his father's side," or a "grand-aunt," who was insane.

Twenty-one persons had insane brothers or sisters. In only one case had both the parents of a patient been insane. In nineteen other cases, 7 males and 12 females, the father was insane; and in fifteen other cases, 2 males and 13 females, the mother. "Three patients, a father and two daughters, were inmates of the house at one time. There are also two sisters, members of whose family have exhibited symptoms of insanity during four generations."

3. Our notices of former reports from the New York City Lunatic Asylum have sufficiently indicated the vast ameliorations made at that institution since it passed under the superintendence of Dr. Ranney. The march of improvement has continued during the year 1856, and a very considerable interest in the establishment appears to have been awakened among the citizens of New York, manifested by contributions to its means of moral treatment.

| | Men. | Women. | Total. |
|---|---|---|---|
| Patients in the Asylum, January 1, 1856 . | 238 | 335 | 573 |
| Admitted in course of the year . . . | 149 | 217 | 366 |
| Whole number . . . . . . . . | 387 | 552 | 939 |
| Discharged, including deaths . . . | 135 | 207 | 342 |
| Remaining, December 31, 1856 . . . | 252 | 345 | 597 |
| Of those discharged, there were cured . | | | 174 |
| Died . . . . . . . . . . | 32 | 34 | 66 |

The *percentage* of deaths is smaller than that of any preceding year. "Although," remarks Dr. Ranney, "the general mortality has been so much diminished, yet, in a few diseases, there has been a decided increase, especially in that known as 'paralysie générale.' This fatal disease, which but a few years ago was described as rare, has increased to such an extent in the city as to have been the cause of nearly one-fourth (15 of 66) of all the deaths in the Asylum the past year. It seems to result from a disorganization and softening of the cortical portion of the brain, involving, if the disease be protracted, the medullary substance. Almost universally certain in its results, its victim seldom survives a longer period than two years after the first symptoms are exhibited. Indeed, so fatal is it in its character, that in no case have I seen recovery follow, where the symptoms were sufficiently well marked as not to admit of doubt. High living, late hours, and strong mental excitement, combined, have been considered the most frequent causes of the disease.

"The past year has been entirely free from the ravages of any epidemic; and no suicide, homicide, or unfortunate accident has occurred in our midst, demanding an inquest."

The use of the mechanical means of restraining the body and limbs of violent, destructive, and suicidal patients, is now almost wholly abolished at this institution. The history of the past year, as recorded in the extract just quoted, is one evidence, in addition to many others of antecedent date, that the less those means are employed the fewer is the number of suicides. "The experience of the last year," says the General Report of the Royal Hospital of Bridewell and Bethlem, for 1843, "adds another confirmation to the now generally received opinion that mechanical restraint is an exciting cause for suicidal propensities; and though it may for the time restrain the attempt, it fortifies and strengthens the desire it is intended to control. * * * * From 1750 to 1770, *when every patient was under restraint*, the suicides were in the proportion of 1 to 202; whereas during the last twenty years the proportion has been only 1 in 963."

In the course of the last ten years, there have been ten suicides at the New

York City Lunatic Asylum. We are not informed of the years in which they severally occurred. It would be interesting to trace them in connection with the gradual diminution of coercive and restraining measures, and ascertain the relation which the one bears to the other. That the suicidal impulse, otherwise often transient or even momentary, may be, as expressed above, confirmed by the adoption of restraining apparatus, we have no doubt. Feuchtersleben relates the case of a man who, "being on the point of committing suicide, wanted to quote the passage '*Quand on a tout perdu,*' &c., and being in doubt whether it was by Voltaire or Molière, forgot his design." Now, had the leather muff and waistband, or the strait-jacket come to the relief of this man, instead of that to him fortunate quotation, there can be but little doubt that his impulse would have been perpetuated to a fatal result.

The progress in the number of the inmates of the institution, the report of which is before us, is shown by the subjoined table:—

| | |
|---|---|
| December 31, 1826, patients in the Asylum . . . . . | 89 |
| " " 1836, " " " . . . . . | 143 |
| " " 1846, " " " . . . . . | 383 |
| " " 1856, " " " . . . . . | 597 |

A condensed statistical account of the medical history of the Asylum from the first of January, 1847, to the 31st of December, 1856, is included in the report. We extract some of its most important details:—

| | Men. | Women. | Total. |
|---|---|---|---|
| Number of patients, January 1, 1847 . | 171 | 212 | 383 |
| Admitted in ten years . . . . . | 2,090 | 2,293 | 4,383 |
| Whole number . . . . . . . | 2,261 | 2,505 | 4,766 |
| Cured . . . . . . . . . | | | 2,105 |
| Died . . . . . . . . . | 593 | 646 | 1,239 |
| Single . . . . . . . . . | 1,108 | 1,058 | 2,166 |
| Married . . . . . . . . . | 875 | 966 | 1,841 |
| Widowed . . . . . . . . . | 107 | 269 | 376 |
| From 20 to 30 years of age . . . . | 677 | 857 | 1,534 |
| From 30 to 40 " . . . . | 677 | 675 | 1,352 |

*Causes of Death.*—Consumption, 332; chronic diarrhœa, 173; cholera (Asiatic), 169; paralysie générale, 78; congestion of brain, 60; paralysis, 48; epilepsy, 44; dysentery, 34; dysenteric diarrhœa, 33; diarrhœa, 31; old age, 29; apoplexy, 27; typhomania, 24; typhus fever, 18; typhoid fever, 17; dropsy, 13; delirium tremens, 10; erysipelas, 8; suicide (by suspension 6, submersion 3, strangulation 1), 10; marasmus, 6; inflammation of brain, 6; hemiplegia, 4; organic disease of heart, 4; pericarditis, 3; ascites, 3; inflammation of lungs, 3; albuminuria, 3; softening of the brain, 3; carcinoma, 2; scurvy, 2; dry gangrene, 2; chronic peritonitis, 2; stomatitis, 2; hydrothorax, 2; chronic pleurisy, 2; acute meningitis, 2; lumbar abscess, 2. Twenty-three other diseases are mentioned as having been the cause each of one death; but they are maladies and accidents which, with the exception of hydrocephalus, serous apoplexy, and inflammation of the spinal marrow, are not seated in the great nervous centre.

Of the whole number of patients (4,383) admitted, only 1,023 were natives of the United States, while 3,360 were foreigners. The subjoined table includes the names of those countries from each of which there were more than nine:—

| | | | |
|---|---|---|---|
| Ireland . . . . . . | 2,142 | Switzerland . . . . . | 21 |
| Germany . . . . . . | 649 | Canada . . . . . . | 16 |
| England . . . . . . | 261 | Wales . . . . . . | 14 |
| Scotland . . . . . . | 72 | New Brunswick . . . | 11 |
| France . . . . . . | 52 | Italy . . . . . . | 11 |
| Prussia . . . . . . | 22 | | |

The remainder were from twenty-seven different countries and colonial islands, with the exception of two, who were natives of the "Atlantic Ocean."

The immigrants from Ireland furnished no less than 48.87 *per cent.* of the whole number of patients.

4. Dr. Brown, of the Bloomingdale Asylum, in his report for 1856, has not departed from his customary brevity in these annual publications.

| | Men. | Women. | Total. |
|---|---|---|---|
| Patients in the Asylum, January 1, 1856 . | 56 | 71 | 127 |
| Admitted in the course of the year . . | 73 | 61 | 134 |
| Whole number . . . . . . . . | 129 | 132 | 261 |
| Discharged, including deaths . . . | 65 | 52 | 117 |
| Remaining, December 31, 1856 . . . | 64 | 80 | 144 |
| Of those discharged, there were cured . | 35 | 19 | 54 |
| Died . . . . . . . . . . | 10 | 9 | 19 |

*Causes of Death.*—General paralysis, 1; phthisis, 3; chronic bronchitis, 1; inanition, 2; apoplexy, 2; epilepsy, 1; acute inflammation of the brain, 2; chronic disease of the brain, 3; dropsy of the chest, 1; exhaustion after dysentery, 1; carbuncle, 1; suicide, 1.

"The health of the household, as a family, has been uniformly good; and the general condition of the patients as satisfactory as the peculiar construction of the institution permitted."

Dr. Brown recommends the extension of the "lodge" for females, so as to connect with the main building; and the introduction of the system of heating by steam.

In our notice of the Bloomingdale report for 1855, we made some remarks upon the imperfect organization of that Institution, its need of an Assistant Physician, and the defective method of heating the apartments of the principal edifice. Since the publication of that notice, the office of Assistant Physician has been created, and Dr. Corey elected as the first incumbent. The other two objectionable matters remain *in statu quo erant;* but as one important step in the right direction has been made, we hail the fact as an auspicious omen for the future.

| | Men. | Women. | Total. |
|---|---|---|---|
| 5. At the Vermont Asylum for the Insane, the number of patients on the 1st of August, 1856, was . . . . . . . . | 190 | 217 | 407 |
| Admitted in course of the fiscal year . . | 64 | 83 | 147 |
| Whole number . . . . . . . . | 254 | 300 | 554 |
| Discharged, including deaths . . . | 62 | 79 | 141 |
| Remaining, August 1, 1857 . . . | 192 | 221 | 413 |
| Of those discharged, there were cured . | | | 74 |
| Died . . . . . . . . . . | | | 37 |

In relation to the treatment of insanity, Dr. Rockwell says: "Whenever any physical disease can be detected, it is treated as in other states of the mind. The moral treatment consists chiefly in pleasant and useful employment, and especially that which requires sufficient physical exercise. We always endeavour to employ both sexes according to their former habits and tastes. After all, much depends upon the faithfulness of kind and intelligent nurses, wholesome and nourishing diet, proper ventilation, the different kinds of bathing, sufficient exercise in the open air—either by riding, walking, or cultivating the garden and farm, and all such agreeable employment of the mind and body as shall promote physical health and call into exercise those faculties of mind that are unemployed. * * * * * If the minds of many of the insane are allowed to remain inactive, they will soon become demented, and manifest a brutish indifference. Sometimes, when confined without any employment, they become fretful and irritable, destroying their clothes and other property, and hasten to an incurable state. But let some useful and agreeable employment be furnished them, and they will be pleasant and cheerful through the day, and enjoy refreshing sleep at night. In this manner the mind and body will become invigorated, and reason will be restored."

6. In the last biennial report of the officers of the Western Lunatic Asylum of Virginia, the Trustees say:—

"During the latter part of the last year, our well-known Physician and Superintendent, Dr. Francis T. Stribling, having conceived a wish to return to the general practice of his profession, tendered a resignation of his office in the Asylum, to take effect on the first of January last. The Board heard of this determination with profound regret, both personal and official; and to convey to Dr. Stribling, in a lasting form, their sense of his 'long and faithful services to the State, and invaluable benefactions to afflicted humanity,' they resolved to present him with a piece of plate in token thereof. This resolution was subsequently carried into effect, not, however, before urgent solicitations from all quarters of the State—and many of them of a most affecting character, from those who had themselves been objects of the doctor's care—had induced him to abandon his intention of severing his connection with the Asylum; and the board have thus the gratification of feeling that a tribute which at one time they feared was to crown the period of the doctor's services to the State, now serves but to mark a point in his career of public usefulness."

Dr. Stribling remarks, in reference to the period over which his report extends, that "not only has the Institution been almost constantly crowded, but we have again been compelled to reject many, very many applicants for admission."

| | Men. | Women. | Total. |
|---|---|---|---|
| Patients in the Asylum, October 1, 1855 . | 226 | 162 | 388 |
| Admitted in course of two years . . | 81 | 55 | 136 |
| Whole number " " . . . | 307 | 217 | 524 |
| Discharged, including deaths . . . | 79 | 56 | 135 |
| Remaining, September 30, 1857 . . . | 228 | 161 | 389 |
| Of the patients discharged, there were cured | 29 | 33 | 62 |
| Died . . . . . . . . . . | 32 | 14 | 46 |

The progress of this Institution is measurably indicated by the following statistics of the number of its patients in the course of a fiscal year, at four periods: in 1828, *thirty-six;* in 1837, *seventy-seven;* in 1847, *two hundred and fifty-six;* and in 1857, *four hundred and fifty-five.*

In a letter to Governor Wise, published in this report, Dr. Stribling triumphantly vindicates the course which he has pursued in the admission of patients under those trying circumstances in which the number of applications far exceeds the ability of accommodation. In the course of this letter, the Dr. bears testimony to the comparative disadvantages of large institutions. "I can but think," says he, "a great error was committed in enlarging this Institution to its present dimensions, but take to myself a large share of the blame resulting from such error."

Two conflagrations are recorded in this report. The first, of a detached building for the worst class of females, on the 8th of November, 1855; and the second, of a similar building, for a like class of males, on the 18th of October, 1856. The former occurred from a defective chimney; the latter is attributed to incendiarism by one of the patients. No patient was injured. "The roofs of both buildings were entirely destroyed before the flames could be subdued. We then experienced the great value of counter-ceiling; and had we ever doubted before its necessity, are now satisfied that it should never be dispensed with. But for the fact that these buildings had thus been constructed, the fire must have communicated with one or both of the stories below, and consequently the damage have been far greater."

7. The most important of the statistical records of the Hartford Retreat, for the fiscal year, ending with the 31st of March, 1857, are as follows:—

| | Men. | Women. | Total. |
|---|---|---|---|
| Patients at the beginning of the year | 98 | 99 | 197 |
| Admitted in the course of the year | 73 | 88 | 161 |
| Whole number | 171 | 187 | 358 |
| Discharged, including deaths | 72 | 80 | 152 |
| Remaining at the end of the year | 99 | 107 | 206 |
| Of those discharged, there were cured | 34 | 37 | 71 |
| Died | 5 | 9 | 14 |
| Whole number, from 1824 to March 31, 1857 | 1,478 | 1,644 | 3,122 |
| Discharged, recovered | | | 1,534 |
| Died | | | 322 |

*Causes of Death this Year.*—Exhaustion, 6; general debility, 2; general paralysis, 2; pneumonia, 1; phthisis, 1; suicide, 1; paralysis, 1.

Dr. Butler, commenting upon the premature removal of some rapidly convalescing patients, whereby injurious and in some cases incurable relapses were produced, says: "As the Institution possesses no power to retain a patient contrary to the wishes of their legal or natural guardians, I can only lament that friends should so often mistake *temporary* results for *permanent* restoration—the remission of the disease for its entire removal. It would be often quite as reasonable to expect fair weather from every lull in the storm. Thus, every year, by the unwise interference of friends, additions are made from among our convalescing patients to our sad list of incurables. Some ten or twelve of those discharged improved, ought to have been on the list of recovered. We can only look for a remedy to a better appreciation of our curative means, and to a more correct knowledge of the disease.

"There is one important improvement among practitioners at large which I am gratified to notice. It is now a rare occurrence that I find maniacal patients have been bled previous to admission. Of nearly two thousand patients who have been under my charge, I have not found it necessary to resort to bloodletting for insanity in a single case. My confidence in the lancet as a curative means, has in no way diminished where the symptoms of the disorder indicate its use. My experience tallies with that expressed in the excellent work upon this subject from the pen of my estimable friend, Dr. Earle. I refer with confidence to that volume.[1] Cases of mania which have been bled previous to admission, I have invariably found difficult of treatment, protracted in their recovery, and sometimes sinking into hopeless dementia."

A description of the new "Lodge" for the violent class of female patients, was mentioned in our notice of Dr. Butler's report for 1854–5. A new one for the same class of men, has now been completed. "A valuable addition was made to this by the construction of a second story. At a comparatively small expense, ample accommodations for twenty additional patients have been obtained. The centre and partition walls of the eight rooms upon the first story, were carried up through the second, giving us eight rooms of the same dimensions of those below, being eight by eleven feet. One of these is appropriated for the attendant, and two others for the bath and clothes rooms, leaving five single rooms for the patients. There then remained a large room (sixteen by eighty-four feet), which was divided into three nearly equal parts by partitions, in part of plank and part of lattice; the centre room (sixteen by thirty) for a parlor, the other two (sixteen by twenty-seven) for dormitories. The three, being practically thrown into one at night, by the lattice doors, afford ample space for fifteen beds."

In respect to the convenient and ornamental furnishing of the hospital wards, Dr. Butler says: "I have aimed to inculcate the doctrine upon the friends of patients and upon all visitors, that insanity should be treated like other diseases, and so to arrange and decorate our wards, that they shall as nearly as possible resemble the chambers of illness in our own homes, believing that whoever has brought himself to consider a disease of the brain as differing only in *degree* from a disease of the lungs, 'has robbed it of that mysterious horror which forms its chief malignity.'" Donations in money to the amount of $716 00, for the purpose of decoration above mentioned, are acknowledged, and the following remarks are made in reference to its appropriation: "I have thus been enabled to purchase, in all, over two hundred prints and engravings, which have been handsomely framed, and between twenty and thirty county, State, and national maps. These have been distributed throughout our fifteen wards (lodges included), excepting two halls in the north and two in the south wings, where I have not thought best to introduce them. Over one hundred of these have hung upon our walls upwards of two years; most of the others were added early in the winter. To this day, not one of these has been in the least injured! Our visitors can bear testimony to the lively and home-like character which they have imparted; but only those who are daily conversant with our household, can fully appreciate their happy and grateful influence."

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[1] Earle, on Bloodletting in Insanity.

8. We extract the subjoined items from the published record of the New York State Lunatic Asylum:—

| | Men. | Women. | Total. |
|---|---|---|---|
| Patients in the Asylum Nov. 30, 1855 | 230 | 225 | 455 |
| Admitted in the course of the year | 141 | 101 | 242 |
| Whole number | 371 | 326 | 697 |
| Discharged, including deaths | 140 | 96 | 236 |
| Remaining, Nov. 30, 1856 | 231 | 230 | 461 |
| Of those discharged, there were cured | 59 | 41 | 100 |
| Died | 22 | 8 | 30 |

*Causes of Death.*—Exhaustion from mental disease, 7; general paralysis, 6; phthisis pulmonalis, 5; epilepsy, 2; malaria cachexia, 2; suicide, 2; chronic nephritis, 1; fibrinous concretion of heart, 1; ovarian dropsy, 1; remittent fever, 1; gangrene of lung, 1; old age, 1.

"The only disease which prevailed to any extent, was a form of continued fever, slightly remittent at the commencement of the attack, but which soon assumed a marked typhoid type. The first case appeared in the latter part of July, and was immediately followed by others. The peculiar features of the disease, and the fact that these cases occurred in dormitories in the immediate vicinity of the main sewers, led us to suspect the existence and operation of some local cause. A close examination resulted in the discovery of numerous rat holes opening directly beneath the windows of these dormitories, and communicating with the main sewers." * * * "No new cases occurred in these localities after the removal of this source of atmospheric poison. Afterwards, however, in the wards where the workmen were engaged in relaying partially decayed floors, and removing the old wash and bath-rooms, the fever reappeared, and though every precaution was taken, * * * * cases continued to occur until the repairs in these wards were entirely completed. * * * Of the twenty-six cases of fever, three died—one patient, and two of our most valuable employees."

Some of our readers may perhaps recollect that a system of forced ventilation, by means of a revolving fan, has been introduced into the female department of this Asylum, and that, in his report for 1855, Dr. Gray published a table of the acute diseases which prevailed in the departments of the two sexes, as illustrative of the hygienic advantages gained by the improved ventilation. We extract a similar table from the report now under notice:—

| Male Department. | | Female Department. | |
|---|---|---|---|
| Continued fever | 17 | Continued fever | 6 |
| Intermittent fever | 4 | Intermittent fever | 2 |
| Erysipelas | 4 | Erysipelas | 1 |
| Dysentery | 6 | Simple fever | 3 |
| | | Dysentery | 1 |

"Through the summer and autumn, diarrhœa prevailed more or less among the male patients, while, on the other side of the house, but seven cases occurred throughout the entire year.

"Among the cases of fever, in some instances there was a subsidence in the activity of the mental affection during the attack, while in others there was no appreciable abatement. The larger number of cases occurred in persons who had been but a short time residents of the Institution, and, as frequently observed by those familiar with insanity, several recent cases of insanity began to improve simultaneously with the invasion of bodily sickness. In one case of melancholia, and three of acute mania, the improvement continued until their final restoration."

The subjoined extract is made for two reasons: First, that the still-continued barbarities towards the insane may widely be made known, in the hope of hastening the day of their total extinction; and second, to demonstrate the superiority of hospital treatment.

A thing difficult of accomplishment by a person ignorant of the proper method of performing it, is often easily done by one who knows how to do it. The sage men gathered together with Columbus thought so, and said so, after he had balanced the egg upon its smaller end.

"In one county where all the insane were, during the year, committed to the care of the Superintendents (of the poor), all were placed in the poor-house for *medical treatment*. Application was made to the Asylum for but one, and in this instance, not until *a continuous confinement in iron handcuffs and foot-locks, and being chained to the floor for six months*, had failed to subdue the patient. Then the officer wrote: 'We have a man so violent and dangerous that we wish to place him in the Asylum.' He was brought to us in the irons above mentioned, which were so firmly rusted that they could not be unlocked, but had to be filed off. *This man has worked steadily on the farm, and with the carpenter at his trade, since the day after his arrival.*"

"Eighteen males and fifteen females (of the 242 admitted), manifested a strong suicidal disposition, and one of the former and three of the latter, were, at the time of admission, suffering from wounds more or less severe, inflicted for the purpose of self-destruction. In one male, an irresistible impulse to homicide, with perfect consciousness of the tendency, was the prominent symptom in his case. In one male and two females, the same homicidal disposition was conjoined with an equally strong suicidal impulse. The latter succeeded in destroying the lives of four of her children at once, severely injured a fifth, and inflicted a dangerous wound upon herself."

The New York State Asylum is not remote from the centre of a very extensive agricultural district, and hence it might properly be supposed that, of its patients, farmers would exceed in number those who have been engaged in any other calling. Of the 242 admitted in the course of the year, 47 were farmers, and 20 farm laborers. No other occupation was represented by a greater number than *seven*. Nevertheless, Dr. Gray expresses the opinion that "farmers, farm laborers, artisans in wood and in the metals, enjoy an exemption from the proportionate frequency (relative to the numbers engaged in each calling) of attack, while persons engaged in literary pursuits, speculators, merchants, are more frequently the victims of mental disease."

| | |
|---|---|
| Patients admitted from Jan. 16, 1843, to Nov. 30, 1857 | 4,830 |
| Discharged recovered | 2,017 |
| Died | 573 |

Six thousand five hundred and three articles of clothing and of bed and table furniture, were made by the female patients and attendants in the course of the year.

To show the value of a farm and a large kitchen garden in connection with an institution which feeds many persons, and particularly one in which a large portion of the labor of tillage may be performed by the inmates, beneficially to themselves, we take a few from the large number of items of the products, for the year, at this Asylum:—

| | | | |
|---|---|---|---|
| Potatoes | 1,000 bushels. | Cucumbers, early | 35 bush. |
| Green peas | 460 “ | Cabbage | 7,000 heads. |
| String beans | 1,200 “ | Celery | 6,200 “ |
| Lima beans | 500 “ | Lettuce | 36,000 “ |
| Beets | 760 “ | Summer squashes | 3,600 “ |
| Onions | 700 “ | Winter squashes | 3,600 “ |
| Carrots | 1,800 “ | Pumpkins | 1,200 “ |
| Turnips | 1,050 “ | Strawberries | 1,500 qts. |
| Tomatoes | 500 “ | Sweet corn | 350 bush. |
| Cucumbers, pickled | 34 barrels. | | |

9. Dr. George Chandler, who, in the language of the trustees, "for more than ten years had most acceptably discharged the duties of superintendent of the Massachusetts State Lunatic Hospital, at Worcester, retired from that office on the 16th of July, 1856, and was succeeded by Dr. Merrick Bemis, the author of the report now under notice.

| | Men. | Women. | Total. |
|---|---|---|---|
| Patients in the hospital, Nov. 30, 1855 | 168 | 168 | 336 |
| Admitted in course of the year | 112 | 129 | 241 |
| Whole number | 296 | 281 | 577 |
| Discharged, including deaths | 97 | 114 | 201[1] |
| Remaining, Nov. 30, 1856 | | | 376 |
| Of those discharged, there were cured | 46 | 51 | 97 |
| Died | 18 | 17 | 35 |
| Whole number admitted from opening of hospital | | | 5,197 |
| Discharged, recovered | | | 2,381 |
| Died | | | 590 |

*Diseases proving Fatal in Course of the Year.*—Epilepsy, 5; exhaustion from maniacal excitement, 5; consumption, 4; palsy, 4; marasmus, 3; inanition, 3; dysentery, 3; apoplexy, 2; pneumonia, 2; chronic dysentery, 1; diarrhœa, 1; old age, 1; carbuncle, 1.

"Late in the summer there were several cases of dysentery, three of which proved fatal; and in the autumn there were a few cases of fever. There have been also several protracted cases of diarrhœa."

"The popular excitements of the day," says the report, "have not brought to us so many patients as is generally believed by the community at large."

But a short time prior to entering upon the duties of his office, Dr. Bemis returned from a visit to many of the institutions for the insane, in Europe. Stimulated, probably, by what he had seen of the operation of the so-called "non-restraint system" practised in some of the British hospitals, he soon undertook to dispense, as far as he thought best, with the means of seclusion and of restraint which had previously been employed in the hospital. He writes as follows upon the subject:—

"Few of our patients are, or have been, in restraint during the year. Since July last, no 'strong room' has been occupied. Patients often require some seclusion, as one sick of acute disease requires a bed. But those whose malady has made it necessary to resort to such means, have been kept in their own room, the common dormitory of the house; and only in few cases has the furniture been removed, and fewer still have we suffered from much destruction of clothing or furniture. We think that patients who have formerly been exceedingly noisy, filthy, and disgusting during their periods of excitement in the 'strong rooms,' have been, to say the least, more easily controlled, and less troublesome, during similar excitements, when not removed from their ordinary rooms."

The trustees, in their report, thus come in to the support of the doctor.

"Dr. Bemis, since he entered upon his duties, has not, in a single instance, made any use of the strong rooms for the confinement of the patients, nor has he as yet found it necessary to employ any extra attendants in the various wards. We are not fully prepared to draw any specific conclusions upon this subject from the experience of the last four months. We are prepared, however, to state the fact, that during that period we have found the patients, as a whole, at our monthly visits, more quiet than during any other four months since our connection with this institution. Occasions have not been rare when, out of some 370 patients, not a single one was subjected to any kind of restraint other than the care of the attendant within the ward. * * * In the last annual report it was stated that of the thirty-six strong rooms, twenty-four had been removed by order of the trustees, and that four large and airy parlours or sitting-rooms had been substituted in their place. Of the twelve strong rooms remaining, the six in the female department have not been used for more than twelve months, and the six in the male department have not been used for the last four months; and the trustees have no doubt that these remaining twelve strong rooms may be removed, and the space occupied by them be appropriated to a much more useful purpose."

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[1] These figures are given as in the report. The sum of the two items is 211 instead of 201.

In relation to other improvements, Dr. Bemis writes as follows: "In order to procure more intellectual amusement, and make it the means of instruction, a plan is in operation to establish a system of daily, intellectual entertainments—historical readings, with familiar explanations, courses of lectures, and school exercises—thus beginning what we hope may prove a source of pleasure and profit, at least a part of the year.

"We have been trying of late to introduce a system of labor among our patients. So far as we have been able to succeed the result has been gratifying. There seems to be no reason why strong, healthy men or women should not perform some labour at an institution of this kind. It should not be compulsory. If it can be made pleasant and attractive, so that a considerable number will engage in it, I have no doubt that it will be found greatly useful as a remedial measure."

Dr. Bemis does not mention the details of his system of labor, and hence we know not the extent to which he proposes to introduce it. It is well known that when this hospital was under the immediate guidance of Dr. Woodward, the amount of labour performed by the patients was very large. If Dr. Bemis sustains it at the same standard, he will do well.

10. The fiscal year of the New Hampshire Asylum for the Insane terminates with the close of the month of May. In their last report, the trustees inform us that, "in March last Dr. Tyler communicated to the trustees his resignation of the office of superintendent of the asylum, and subsequently, at a meeting of the board, his resignation was accepted, to take effect on the fifteenth day of July next." On the seventh of May, Dr. Jesse P. Bancroft was elected as successor to Dr. Tyler. After enumerating many improvements made in the establishment in the course of the five years last past, the trustees say: "In the execution of these, Dr. Tyler has ever taken a deep interest, and much of their success is due to his sagacity in their device, and his assiduous superintendence of their execution. His fidelity and skill in the management of the patients committed to his care, is evinced by the success which has thus far attended his efforts in their behalf."

| | Men. | Women. | Total. |
|---|---|---|---|
| Patients in the asylum, May 31, 1856 | 77 | 77 | 154 |
| Admitted in course of the year | 48 | 49 | 97 |
| Whole number | 125 | 126 | 251 |
| Discharged, including deaths | 41 | 40 | 81 |
| Remaining, May 31, 1857 | 84 | 86 | 170 |
| Of those discharged, there were cured | 24 | 23 | 47 |
| Died | 6 | 6 | 12 |

*Causes of Death.*—"One of apoplexy, one of epilepsy, and the remaining ten worn out by chronic insanity."

| | |
|---|---|
| Whole number of admissions from opening of asylum . . . | 1476 |
| Discharged, recovered . . . . . . . . . . | 662 |
| Died . . . . . . . . . . . . . . | 140 |

An addition, called "the Rumford wing," was completed and opened to the patients in the course of the year.

Dr. Tyler's report is brief, and chiefly devoted to matters of local interest.

P. E.

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Art. XX.—*Proceedings of Westchester County Medical Society,* at its Annual Meeting, held in the Village of Sing Sing (N. Y.), June 3, 1856. 8vo. pp. 50.

The professional reports embraced in the *Transactions* of the Westchester County Medical Society, though in themselves sufficiently interesting, present but few prominent facts demanding especial notice.

In a report on the medical topography, epidemics and endemics of the southern section of the county, drawn up by Dr. J. D. Trask, of White Plains, the following statements appear in reference to the prevalence of intermittent and remittent fevers, in that portion of country included in the report. They show how little positive knowledge we possess as to the etiology of those diseases:—

"The County of Westchester has, almost without exception, been regarded as unusually healthful. Along the Sound, miasmatic diseases have always prevailed to a certain extent, but within the past four or five years, intermittents and remittents have appeared where they have not been known before within the memory of the oldest inhabitants. This seems to have been due to a wide-spread atmospheric influence, which has passed on northward to regions rarely if ever before affected. Its northern limit, the committee have not, from inquiry, been able to learn.

"An effort has been made to ascertain, as far as practicable, the probable sources of malaria in those neighbourhoods where it always prevailed more or less, before the spread of the general atmospheric influence to which allusion has been made. It does not appear, however, that during the period of this general diffusion of malaria, such diseases have been more prevalent and more grave in places where they have always prevailed; the poison has been diffused through new localities, but not concentrated in old ones.

"Dr. Sands, of Portchester, writes: 'Previous to the last five years, I am not aware of having met with a case of disease of decidedly malarious origin in the neighbourhood. I was in practice here ten years before I saw a case of intermittent; during the last five years, however, cases have abounded. The disease has nearly disappeared, very few cases having occurred this summer. Excavations and drainage have, in my opinion, increased its prevalence. I have observed the disease in the neighbourhood of marshy grounds, particularly on the east of such localities, when the residence is not much elevated above the marsh; this I have attributed to the prevalence of westerly winds.'

"In relation to Mamaroneck, Dr. Stanley says: 'There appear to be certain localities or houses, where intermittent fever has prevailed more than elsewhere, but these seem to me to be so irregularly placed as to forbid the supposition that the ponds of fresh water or the salt marshes certainly produced the increased severity of the disease. The large factory pond was drained in the spring of 1854, and during the summer the channel through the centre of the pond, which had been nearly obliterated, was opened, and the whole surface became quite dry in June. The fever that year was about the same as the year previous, certainly not less. In 1855, the fever in the vicinity of the stream, and also of ponds a few miles off, very much diminished; and no other disease having the marks of an epidemic appeared in its place. The high grounds three or four miles back are not exempt, but are less affected by intermittent disease than the *first low ground back of the first ridge,* which slopes down to the tide water; and *there,* I think, intermittents have been the most prevalent.'

"The occurrence of the disease five or six years ago, as an epidemic, so far as special localities were concerned, was much as above stated; but one great source of its severity and continuance, was a disregard, in particular families, of cleanliness, temperance, and good living, with proper rest of body and mind. The disease increased, and badly, from 1848 to 1853; and that year and the next it prevailed very extensively and severely, returning, in most cases, after it was broken, on or very near the seventh, fourteenth, or twenty-first day.

"The factory pond above referred to, was indicted in the year 1853 as a nuisance, from its presumed agency in developing malaria; but it was proved that malarious diseases at that time prevailed in regions previously unaffected. Dr. Moulson says: 'Intermittents are less prevalent in Mamaroneck since the factory pond has been drawn off; but this does not show a connection of cause and effect, since the same has happened, *pari passu,* at New Rochelle, where no pond has been drained.'

"In reference to New Rochelle and its vicinity, Dr. Moulson says, after referring to swamps, or low grounds which become dry in summer: 'An island in the Sound, nearly a mile from the shore, of about seventy acres, has upon it a pond of fresh water, about fifteen rods in diameter when full, but of much smaller dimensions in dry seasons. This pond is on the eastern side of the island, where the ledges of rock project above the earth and breast the waves. Large quantities of muck are taken from the bottom and sides of this pond, when left naked in dry seasons, together with the flags and weeds which grow luxuriantly on its borders, and spread upon the land as manure. Paludal fevers prevail here as well as on the main land. I have never found such diseases more prevalent, *cæteris paribus,* where salt and fresh water meet, than where there was no salt water. Formerly, before intermittents became so general, they were confined to the valleys, and to the neighbourhood of rivers and swamps, and seldom occurred near salt marshes or meadows, unless fresh water swamps were near; but I visited a family of seven persons in Pelham on the third of September, 1853, four of whom were ill with intermitting fever, and all had been seized within the preceding twenty-four hours. On the day following, two others had the same disease. No local cause or appreciable atmospheric changes could be assigned as a probable cause. Intermittents prevail in Pelham more than in New Rochelle, if I am rightly informed, and the islands on its shore are not exempt from the disease, as they formerly were. The isthmus called Rodman's is, like the islands, generally exempt from paludal fevers.'

"Intermittents and remittents were much more prevalent, and of a graver character, three or four years ago, in New Rochelle and Pelham, than they are at present, or within two years past, while they are increasing and becoming more grave in East Chester within a year or two. I have seen nothing to induce the belief that malaria is produced by excavations or drainage, nor have I known it diminished by such means.

"In the town of Westchester, according to Dr. Ellis, 'intermittents do not prevail to any considerable extent in my practice, and when occurring, are confined almost exclusively to the labouring classes. I do not consider them attributable to malaria or any local cause, but to improvident exposure, and sudden changes of temperature.'

"'In the township of Yonkers,' says Dr. Gates, 'a mill-pond near the southeast part, covering the most part of one hundred acres of flat, moist land, appears to be the cause of intermittents, which have always prevailed in its immediate vicinity. In the Saw-Mill Valley is a strip of moist land which has, in some instances, produced intermittents. Aside from the above, we have been exempt from the disease during the last thirty-two years, until the last five years, during which they have prevailed a little more generally, commencing in a very wet summer; still, we are *comparatively* exempt.'

"Dr. David Palmer, formerly of White Plains, informs us that he commenced practice in this place forty years ago. During the first few years of his practice, intermittent and remittent fevers were hardly heard of. 'Suddenly, however, these diseases made their appearance, and became very common all over that part of the county. I recollect I used more quinine in one year than I had previously done for some half-dozen years. According to the best of my recollection, the season was both wet and warm, giving rise to the decomposition of vegetable matters, to which, at the time, I attributed the prevalence of the fever. Remittent fever was not uncommon at the time, but seldom of such severity as occurred at New Rochelle, and here, again, although the generating cause, *wet season*, had passed by, still intermittent and remittent fevers continued more or less common for several succeeding years, depending, I suppose, on the original exposure, the poison remaining, for the time, latent.'

"'Nothing,' says Dr. Palmer, 'in the course of my practice of twenty-four or five years, has led me to suppose that any peculiarities existed in that section of country, to control or influence the character or type of the different diseases as they appeared from time to time. I have always considered it a healthy part of the county.'

"White Plains, and its immediate vicinity, have been regarded as a singularly healthy region, and for several years had enjoyed almost an exemption from diseases that at times have prevailed along the North and East Rivers. It has not unfrequently been remarked that epidemics, like showers in summer, pass upward along the borders of those two great water-courses, leaving this locality unvisited. For many years intermittents had not been enumerated among the diseases, previous to the summer of 1853. A few cases had occurred occasionally among those in the immediate vicinity of a mill-pond on the northeastern limits of the town, and of another on the western borders. During the summer of 1853, there was much rain, and a luxuriant growth of vegetation covered the earth's surface; portions of this decomposed, giving rise to offensive odors in the gardens. During the season, intermittent fever made its appearance in this vicinity, and from seventy to eighty cases came under my immediate notice. During the summer and autumn of 1854, it prevailed to a much less extent; while, in the summer of 1855, there occurred an epidemic of intermittent and remittent fever of some extent."

Similar facts to the foregoing have been noticed in Pennsylvania. From many districts where, formerly, fevers of an intermittent or remittent type prevailed annually very extensively, they have of late years almost entirely disappeared; while, in other districts, where formerly these diseases were unknown, they have lately become, as it were, endemic, and this without any evident change in the local conditions of the different localities. The circumstances supposed to be favourable to the production of the fevers in question, have not been removed in the one case, nor become more developed than before in the other. There can be no doubt that, as a general rule, it is to those localities in which the air is humid, and, at the same time, has not a sufficiently free circulation, that intermittent and remittent fevers are endemic. That, however, these diseases do not invariably prevail in, and are far from being exclusively confined to such localities, facts innumerable incontestably prove. There would, indeed, appear to prevail at irregular periods, and for a series of years, certain conditions of atmosphere, extending over large districts of country, favourable to the production of intermittent and remittent fever, irrespective of the presence of the supposed sources of miasmata. During the morbific conditions of atmosphere alluded to, periodical fevers prevail extensively, and in situations where, at other times, they are rarely or never observed; while, in the absence of such atmospheric conditions, they never or very seldom occur beyond what are known as malarious districts, and in them often to a very limited extent.

A report is presented by Dr. G. J. Fisher, of Sing Sing, of cases illustrative of the effects of needles accidentally penetrating different parts of the body. The chief object of Dr. Fisher is to point out the ultimate danger that may and often does result from needles or portions of needles accidentally driven into the body being allowed to remain, and gradually work their way to the neighbourhood of some important nerve, bloodvessel, or other organ, causing intense suffering by the irritation they cause, or more serious and even fatal results, by penetrating some vital part.

It is unquestionably the duty of the surgeon to endeavor, in every instance where needles or parts of needles have entered any part of the body, to ascertain their precise locality, and to attempt their removal, by an operation, if necessary, whenever this can be performed "without involving any serious risk of wounding some important nerve or other structure, or of exciting a high degree of inflammation." But we cannot accede to the propriety of the direction to spend hours in exploring with the scalpel in every direction, at the part where the needle enters, particle by particle, until the needle is found.

The following cases of phlegmasia dolens—the one occurring after typhoid fever, and the other, in both the upper and lower extremities, after parturition—by Dr. James Fountain, of Jefferson Valley, are not without interest:—

"The case of phlegmasia dolens I mentioned at our annual meeting, occurred in a young, healthy girl, aged 14 years. A typhoid fever broke out in the neighbourhood of her father, in the winter of 1847. The mother acted as nurse in two fatal cases, and contracted the disease. Immediately on her convalescence, her daughter had it. It ran through its regular stages, and subsided. Some few days after its close, she was seized with pain in the calf of the left leg, in the morning. The mother applied some warm flannels to the part through the day, but, about ten o'clock in the evening, the pain had reached the groin, and had become so extremely violent, that she screamed with it incessantly. At twelve at night, her father called me up. I sent her three powders, each containing about three grains of opium, and two of camphor—one to be taken every two hours, till relief be obtained. Next morning, I found she had taken two of the powders, and had found relief. Her leg was tumefied from the toes to the hip; skin white, and extremely tender, but not painful, unless the limb was moved; the swelling was tense and elastic; the joints were not affected internally. In the afternoon, I gave her an emetic of tart. ant. with tinct. sem. colchici. It operated freely, and the limb was immediately less sensitive. On the next day it was far less so, and in a day or two it became œdematous, and by means of bandaging and some mild diuretics, it disappeared.

"About thirty years or so ago, I was in the practice of waiting on a Mrs. Horton in her confinements. For three successive labours, her pains seemed not to remit in the least upon the expulsion of the child, but kept on with the same expulsatory effort, after the placenta was expelled, until two or three spoonfuls of tinct. opii had been taken. After the last labour, she had a regular attack of phlegmasia dolens, first in the right leg, then in the right arm, then in the left leg. These were clear cases, and were not rheumatic, for no more pain was produced by moving the joints than by moving the limbs generally. They yielded at once to full doses of opium and camphor, as they always will, and emetics never fail to change the albuminous to a serious condition of the affected limb." D. F. C.

## Art. XXI.—*San Francisco Medical Society; Annual Address delivered before the Society, pursuant to appointment, Jan'y* 27, 1857. By Henry Gibbons, M.D. 8vo. pp. 24.

From the annual address of Dr. Henry Gibbons, delivered before the San Francisco County Medical Society, January 27, 1857, a production replete with correct principles and liberal views, well and boldly expressed, we select the following paragraphs, as presenting, in brief outline, a general view of the climate and diseases of California:—

"The climate of the Pacific coast, in its etiological relations, opens an immense field of observation and study. In the winter season, if winter it can be called, from November to April inclusive, there is but little difference of temperature on the seaboard, in a range of fifteen degrees, from the mouth of the Columbia River on the north, to San Diego on the south. Nor is there much difference inland, except that the more elevated regions are liable to colder weather. Thus whilst snow and ice are rarely seen on the coast, the mountains of the Sierra Nevada range are covered with snow nearly all the year.

"In the summer season, a similar uniformity of climate presents itself on the seaboard; but during this period, from May to October, a wave of cold air flows daily from the ocean, often loaded with falling mist. So little difference is there in temperature between winter and summer in this wide range of coast, that flannel garments are constantly worn, and no one thinks of changing the dress from winter to summer. But beyond the mountain barrier, which skirts the ocean, and walls out the sea breeze from the interior, the heat of summer is often intense, the mercury rising frequently to 100 degrees or upwards. At the same time, the air is generally very dry. Almost invariably, however, the nights are pleasantly cool, so that sleeping is well done everywhere.

"A few years ago it was supposed that the climate of California was almost proof against pulmonary disease. In 1850, if an individual happened to cough in church, all eyes were turned on him with curiosity and amazement. The native population, it was said, were entirely exempt from disorders of the lungs. But time has dispelled the delusion. Pulmonary consumption and the kindred affections have become the great enemy of human life, as in the Atlantic States. Our entire climate everywhere is less injurious, it is true, to pectoral disorders than the corresponding latitudes on the Atlantic. But, the cold and searching winds of summer on the seaboard, while they often build up the strength by their bracing and tonic power, are in general unfavorable to patients suffering from the class of maladies under consideration; and the extreme heat of the interior is equally noxious, from its debilitating influence. The relation of our climate to this class of diseases may be summed up in a few words. Persons afflicted with bronchial or pulmonary disorders, in the incipient stage, are almost invariably benefited, and oft times cured by traversing a tropical climate, and taking up their abode in California. On the other hand, such diseases are developed *ab initio* in this country, about in the same degree as in the Atlantic States. As the female population increases, the bills of mortality exhibit a corresponding increase in the number of victims.

"Some years ago, it was a general practice to send pulmonary cases to the Sandwich Islands. But experience has shown its futility. We stand in need of some other sanitarium. In many cases, change of climate is the only remedy; and a genial climate, not liable to sudden or material fluctuations, and exempt from strong winds, are requisite conditions. In the summer season, the region bordering on the Bay, at its northern and southern extremities, may serve the purpose, holding, as it does, a medium place between the damp and chilly ocean climate of San Francisco and the arid and scorching heat of the interior. In the winter we must turn our attention to the south. Los Angelos and San Diego, in the southern section of the State, are still too far north. The table land of Mexico will probably supply the desideratum. But even in Mexico, proximity to the ocean must be avoided. Twelve months ago, in a brief stay at Manzanella, which is on the western coast, in latitude 19°, I observed among the native population an extraordinary prevalence of pulmonary disease, caused, in all probability, by their sleeping on the damp ground, exposed, more or less, to the cool night wind. Sixty or seventy miles inland, in the vicinity of Cotima, is a different climate, said to be much more salubrious. With all the knowledge I now possess on the subject, this spot appears preferable to any other, and, accordingly, I have latterly recommended it to my patients, instead of the Sandwich Islands. This subject, however, deserves much more consideration than it has yet received."

"Epidemics are of rare occurrence in this State. At an early period, when the comforts of life were greatly wanting, diarrhœa and dysentery were prevalent, and extremely fatal. In those days men dwelt in tents, and slept on the earth; they used a diet of animal food, almost exclusively, undiluted with vegetables and fruit, and composed of beef run down before being killed, and they employed that *blessed* prophylactic, brandy. With improved habits of life, and wholesome diet, and a diminished antipathy to the internal use of cold water, these diseases have greatly diminished, and death from dysentery or diarrhœa is comparatively rare.

"In the winter of 1850–51, the malignant cholera was epidemic in various localities, visiting our territory in its regular course of march on the western coast of North America. In this city the mortality was light, but Sacramento was nearly depopulated. Since that time, sporadic cases have occasionally appeared, and patients laboring under the malady, and dying with it, have been frequently landed from steamships from Nicaragua and Panama, and taken to the county hospital, or otherwise disposed of. The disease has, in no well authenticated instance, extended to others. Several cases were said to have appeared in the neighbourhood where the clothing from an infected vessel was sent to be cleansed, giving support to the theory which attributes the spread of malignant cholera to exhalations from the feces of its victims. But as the statements to that effect were connected with some pecuniary interests or speculations, they are not entitled to credit.

"In June and July, 1851, bronchial affections first made their appearance in San Francisco, in the form of an influenza. Since that date, catarrhal disorders have prevailed nearly every summer, in a sufficient degree to be pronounced epidemic."

"Croup is a disease from which the infantile population of our State suffer very much. It is apt to be violent and intractable, terminating fatally in many cases, perhaps as much for want of timely aid and proper nursing as from the intrinsic violence of the malady."

"Scarlatina first presented itself to the notice of the Amerian inhabitants in the spring of 1851, on the heels of the cholera. There were few cases, however, and they were of a mild grade. Since that time it has occurred sporadically, and with the same tractable character. A form of disease bordering on malignant scarlatina has committed sad havoc in certain localities in the past two or three years. It commences with inflammation, and mostly ulceration, of the fauces and tonsils, exhibiting no peculiar features, and exciting no alarm. Sometimes a cough is present from the beginning. Suddenly the patient is seized with croupy symptoms, and in a brief period, from six to twenty-four hours, life is extinguished. The muscular strength and the faculties of the mind are generally retained to a late period. The pulse is that of scarlatina, but there is no eruption. Delirium and convulsions seldom occur. Children are its ordinary victims, though adults are not always exempt.

"A striking feature of this malady is its fatality in certain families. It may visit only a few houses in a village or neighbourhood, but in them it is apt to carry off all the young children, in rapid succession. In San Francisco, it has not prevailed so much as in Oakland, Sonoma, and some other towns. In the only instances within my knowledge, in this city, where all, or nearly all the children of the household were swept away, the victims were trophies of homœopathic practice. I have had no fatal, and no very malignant cases, in my own charge exclusively, but have visited a number in this city, and at a distance, in consultation, where no opportunity was afforded for autopsic examination. In these cases the fatal result appeared to arise from the rapid extension of the inflammation to the air-passages and lungs, without a full development of the proper symptoms.

"The treatment that has proved most salutary, under my observation, consists mainly of the free internal use of quinia, and the application of nitrate of silver, in solution, to the fauces, with a large blister to the chest in case of pneumonia."

"Diseases of the urinary passages are frequent and troublesome, especially chronic affections of the urethra, which often defy all treatment, yielding only to time. In fact, it may safely be said, that an unusual tendency exists on this coast to disorders of the mucous membranes in general.

"Insanity, as might be expected, is fearfully prevalent in California. It grows directly out of the excited mental condition of our population, to which the common use of alcoholic drinks is a powerful adjunct. Other cerebral disorders do not abound, excepting meningitis in infants. It has been remarked that, notwithstanding the constant exposure of a large portion of the male population to the extreme heats of the interior, 'sun-stroke' is scarcely ever heard of."

"There has been observed in the diseases of this coast an extraordinary tendency to the paroxysmal form, or to exacerbations, requiring the use of quinia. This occurs in dysenteries, in pneumonia, in puerperal women—in short, it is traced in almost every affection attended with febrile action. Fevers to which the dubious term malarious is conveniently applied are scattered everywhere, in city and country, and are often endemic in certain districts. In the intermittent phase, they are often excessively annoying by their repeated returns after apparent cure. Typhoid, or rather ataxic, fevers are frequently met with.

"Acute inflammations, requiring the lancet, are not common. It is truly singular to what extent venesection is discarded in California. I am apprehensive that we allow this potent remedy to be too much neglected."

D. F. C.

## Art. XXII.—*Experimental Researches relative to the Nutritive Value and Physiological Effects of Albumen, Starch, and Gum, when singly and exclusively used as food.* By W. A. Hammond, Assistant Surgeon U. S. A.

The above is the title of an essay for which a prize was awarded by the American Medical Association at its last session, and which treats of subjects which should enlist the attention of every physician who wishes to practise understandingly. Without a thorough knowledge of the effects of each article of food upon the system, we prescribe at random particular articles of diet for the sick, and are to some extent unable to understand some of the most frequent causes of disease. And yet our actual knowledge on these points is very limited. Magendie indeed showed that neither gelatin nor albumen would suffice to sustain life; and Boussingault proved that fat could not be assimilated in sufficient quantities. Many other isolated facts might be quoted, which have been recorded within the last twenty years; but the want of an accurate knowledge of tissue metamorphosis prevented most of these observers from affording us the rationale of these facts. The experiments of Chossat on animals during inanition, and Lehmann on himself, under different diet, have gone far to enlighten us. But Dr. Hammond has chosen a new field of investigation; and with a diligence and sacrifice of personal comfort worthy of high praise has given us the results of three series of experiments upon himself, recording the daily amount of food and drink taken, and the daily loss of the system by the different emunctories, with remarks upon the results obtained, characterized by the careful consideration and general correctness.

The results of his experiments upon *gum* may be stated in a few words—nearly the whole amount ingested during four days was discharged unaltered by the bowels. This fact is important as showing that the chemistry of our laboratories is after all identical with the chemistry which plays such an important part in all vital phenomena. It has long been known that gum was not rendered endosmotic by any of the digestive fluids, out of the body; but its long use as an article of diet in acute disease has induced among practitioners the conviction that in some way it must be digested. Nothing but such an experiment as Dr. Hammond's could finally settle this point; and henceforth we hope to see gum discarded, or at least only used as a demulcent—it is no more nutritive than rose water is astringent.

The other two series of experiments involve many points of the highest physiological importance. It is not our purpose to discuss them fully. We shall content ourselves with indicating some of them, and advise our readers to take up the essay itself and study it. These two series of researches occupied ten days each; previous to the commencement of the first one, Dr. Hammond determined, by observations of the ingesta and egesta for five days, the ordinary amounts of excretion from the bowels and kidneys under usual diet. Sufficient time was allowed to elapse between the albumen and the starch series for the system to regain its tone. We are presented at the close of each series with tabular statements of the ingesta and egesta (including the transpiration), temperature of body, variations in weight, height of barometer and of thermometer for each day. Analyses of the blood on the 1st and 10th days of each series are also given, together with tables showing the amount of carbon absorbed in the albumen series, and the relative proportions, in the same series, of the nitrogen absorbed to that eliminated in the forms of urea and uric acid. The conclusions from the albumen experiments may be thus stated:—

1. The amount of albumen in the blood was materially increased, as was also that of the fibrin and of extractive; while the blood-corpuscles and salts were diminished and fat almost disappeared.
2. The animal temperature underwent a very slight diminution.
3. The urea, uric acid, and residue of the urine were increased, while the chlorine, sulphuric, and phosphoric acid diminished.
4. The feces diminished in quantity, relatively, until the 6th day; upon the 8th diarrhœa ensued, thus augmenting the water; the ether-extract diminished, while the alcohol-extract and insoluble residue increased, especially the latter; thus indicating an increase of the bile-resins and the passage of a considerable amount of albumen unaltered.

The albumen used was procured by boiling the serum of bullocks' blood; the quantity averaged 8343 grains daily. No derangement of health ensued until after the 4th day, on which the amount consumed reached 12,725 grains; headache and slight fever occurred. On the 6th day, albumen appeared in the urine. On the 8th, a severe diarrhœa ensued, which continued some days after the close of the investigations. By deducting the amount of insoluble residue from the albumen ingested for each day, Dr. Hammond obtains, as he states, the amount of albumen absorbed; and then proceeds to calculate the actual amount of carbon introduced into the system, and to compare this with the amount required for respiration. He thinks he has proved that the system can absorb enough albumen to support respiration, as the temperature of the body was nearly maintained; and certainly, the daily variations correspond closely with the amount of albumen taken. But is there not an error in assuming that all the albumen which was not absorbed would appear in the course of twenty-four hours in the feces? We think so; and to support it, Dr. H.'s weight decreased continually except on two days, when he consumed about 3000 grains of albumen more than usual; on these days his weight *increased* a few hundred grains. This has an important bearing upon the other point discussed by Dr. H., the proportion of nitrogen in the urea and uric acid to that absorbed. We cannot help thinking that a part of the albumen remained unacted upon in the bowels, and caused the diarrhœa of the 8th day; and that if the stools had been watched for three or four days after the close of the experiments, a large amount of the albumen would have been thus recovered. Of 100 grs. nitrogen absorbed, Dr. Hammond found but 30.08 grs. in the urea and uric acid, instead of $\frac{5}{6}$, as stated by Lehmann; Rigg and Barral found but 50 per cent. and 42 per cent. respectively; so that we must either conclude that these observers were mistaken, or that the nitrogen sought some other way of exit, or remained permanently in the system. Of these, the second is the most probable; the residue of the urine would probably have yielded enough to modify the above proportion considerably. The probability of some of the albumen having escaped subsequently, must also be remembered. The diminution of the ether-extract of the feces indicates that the fat resorbed from the system was consumed in respiration; while the increase of fibrin in the blood very likely was due to the inflamed state of the bowels.

Of the second series of experiments, we have not much to say. Debility ensued on the third day; and soon after palpitation of the heart followed, with evident symptoms of deficient aeration of the blood. Sugar appeared in the urine on the 5th day, and continued to be thus excreted for five days after the experiments terminated. The weight of the body declined but slightly. The urea and uric acid were reduced (we regret to find no mention made of the presence or amount of hippuric acid): while the solid residue increased considerably, probably from the presence of sugar. The ether-extract of the feces was slightly lessened, the alcoholic and water-extract diminished considerably, while the insoluble residue was very small, thus proving that nearly all the starch (about 10,357 grs. per diem) ingested was disposed of. It should be added, however, that Dr. Hammond continued to lose weight for some days after the experiments ceased. From the analysis of the blood we learn that the fibrin, fat, and extractive increased considerably, while the blood-corpuscles, albumen, and salts diminished. The decrease of the latter is easily explained when we remember that the system was living upon itself. The increase of extractive (from 4.84 to 11.25 parts in 1000) corresponds closely with the amount of sugar stated by Lehmann to exist in the blood before it appears in the urine, though unfortunately no absolute determination of its amount was made. The excess of fat is remarkable, and taken in connection with the fact that the system did not lose weight as might have been expected, indicates strongly the probability of some of the glucose absorbed having been converted into fat. This is probably the most interesting physiological point in the series; while we may take an important lesson in therapeutics from the oppression of the circulatory system induced by the starch diet. We ought to be careful how we administer amylaceous food to patients suffering under diseases of the respiratory organs, for by so doing we put an additional amount of labour upon the latter. A decided increase of temperature and elevation of the pulse were noted by Dr. Hammond.

We hope that these are but the commencement of series of experiments by Dr. Hammond, whose careful precision and sound mode of reasoning admirably fit him for his undertaking.

Since the above was written, Dr. Hammond has kindly permitted us to test his *vital capacity*, which we find equal to 225 cubic inches. As he is not accustomed to the use of the spirometer, this probably falls below his actual capacity, which may therefore be considered normal. J. C. M.

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Art. XXIII.—*Essays on the Secretory and the Excito-Secretory System of Nerves in their Relations to Physiology and Pathology.* By Henry Fraser Campbell, A. M., M. D. One of the Vice-Presidents of the American Medical Association, and Professor of Special and Comparative Anatomy, in the Medical College of Georgia (Augusta). With illustrations. 8vo. pp. 135. J. B. Lippincott and Co., Philadelphia, 1857.

We have experienced no little surprise at the apparent apathy with which the several communications of Dr. Campbell, in relation to the excito-secretory system of nerves, have been received by the physicians of this country. We had hoped that after the fact of the existence of an excito-secretory nervous action had been fully recognized, and publicly announced by so imposing an authority as the late Dr. Marshall Hall, of London, it would, at once, have attracted the attention it deserved on the part of such as had the time and talents for its further investigation—and of these we have, unquestionably, many in our midst—in order that so important a truth should be confirmed and elucidated, and its relations to physiology and pathology, already, in part, pointed out by Dr. Campbell, more fully determined and developed.

The importance of the discovery of an excito-secretory function as a key to the correct interpretation of many physiological phenomena, and to the elucidation of numerous pathological conditions, in regard to which we have, heretofore, been groping in the dark, must be evident to every one upon even a superficial glance at the subject. To what extent it may lead to a modification and correction of our received opinions in respect to the correlation of divers vital actions, during a state of health, and the true character and connection of the diseased conditions of the several tissues and organs, is a question that can only be determined by future observations and experiments.

That the sensory nerves of the cerebro-spinal system, are not only excitors of the motory apparatus, but that, under certain circumstances, most of them sustain, also, an analogous relation to the secretory nerves, exciting these, and modifying their action, and thus diminishing, increasing, and altering the secretions of the surfaces upon which they are distributed, according to the extent and character of the excitation applied, is a proposition that we believe to be incontrovertible. In our opinion, the expositions of Dr. Campbell, though confessedly limited, and in many particulars defective, force upon us its adoption. The subject, nevertheless, still opens up a wide field for investigation on the part of both physiologist and pathologist, and it is one that will amply repay those who shall enter upon its cultivation, with the right spirit, and in the right direction.

Most of the essays comprised in the volume before us have been very fully noticed in former numbers of this journal, and a very full abstract has been already given, of the facts upon which are based the claim of Dr. Campbell to priority in the discovery and naming of the excito-secretory system of nerves—which all must admit are clear, positive, and conclusive.

In the essay to which was awarded the prize of the American Medical Association, at its tenth annual session (May, 1857), Dr. Campbell has endeavoured to demonstrate the fact that many of the important acts of nutrition and secretion are modified in both health and disease, through the agency of the excito-secretory nerves, and that it is to aberrations in the functions of these nerves, that many of the heretofore mysterious phenomena of diseased action are mainly attributable.

After a general view of the *secretory* system of nerves, in which certain allied facts pertaining to the functions of the two grand divisions of the nervous system—the cerebro-spinal, and the secretory—are presented in a manner which Dr. C. has deemed best calculated to sustain the deductions he advances, subsequently, in reference to the excito-secretory function of the sensory nerves.

"We have seen," he remarks, "that to the ganglionic system, and to this system alone, are confided all those important and mysterious processes which pertain to nutrition and secretion; or, in the words of Bichat, 'those thousand secret operations of a living body.' It presides over all our internal chemico-vital actions, superintending and directing all blood-changing processes, and instigating all metamorphoses occurring in the intimate structure of the animal tissues. It is the system for the internal and individual wants of the organism, and its possession enables the being to sustain an independent and individual existence, carrying on, to a certain extent, all strictly organic actions, without the aid of external influences."

In exposition of the excito-secretory function, Dr. C. adduces the phenomena produced in the secretory surfaces within, by impressions made upon the external surface of the body. The sudden exposure of the surface to a cold atmosphere, or to a cold stream of water, it is well known, will increase the urinary secretion. This fact has been variously explained. It has been supposed by many that there exists an antagonism between the cutaneous surface, and the secretory tubules of the kidney, whereby, when the exhalant function of the first is arrested the secretory function of the latter is increased. This doctrine of antagonism, Dr. C. regards as altogether unphilosophical, whether applied to the kidneys, the mucous surface of the intestines, or to any other portion of the animal organism.

"There is," he observes, "no such principle, in our humble opinion, as antagonism to be recognized in any of the operations of nature in her conduct of the vital processes, but a beautiful correlation and reciprocity are everywhere manifest in her economy. Nor yet can we justly account for these sequences upon the theory of revulsion, or a driving in of the blood upon the secretory organ. The real explanation is far more simple, and far more in accordance with the recognized principles of action in the nervous system. Under favourable circumstances, we irritate an excitor nerve, and we stimulate muscular contractions, evidencing the existence of the excito-motory function. Now, under the circumstances above related, the excitor or sensitive nerves, having received an appropriate stimulus, excite, through the medium of the spinal centres, the action of those ganglia and filaments dominating the secretory organs in question; they control, as we have seen, their circulation; they preside over their secretions, and thus stimulated, they are excited to modify the circulation and the secretion. So far this is a normal act, the result of that ordained and wholesome correlation established between the two portions of the organism through these two systems of nerves, the sensory and the secretory; but should the excitation be unusually strong, amounting to what is popularly termed a 'shock,' or too prolonged, we find the secretory system acting unduly, and this action is then carried to an abnormal extent: the *dynamic* act so modifies the circulation, that secretion becomes aberrated, or even arrested, and, perhaps, a change in the condition of the tissue from altered nutrition may result. Dr. Marshall Hall thus remarks, in his recent article upon this subject: 'A partial keen current of air, falling on *any* susceptible portion of the skin, may induce inflammation in any susceptible internal organ. An extensive burn, or scald, is apt to induce pneumonia.'"

Dr. Campbell next examines some of the phenomena occurring in the region of the fifth pair of nerves, which send certain filaments to the sensitive parts about the eye, others to the teeth, and also sensitive branches to the head and face.

"Under certain circumstances," says Dr. C., "the sensitive conjunctival surface of the occular globe is exposed to a sudden draft of air, or to some mechanical irritant. The first effect occurring from this exposure, is an immediate increase in the secretion of the lachrymal gland. This may continue, or it may be entirely arrested after continuing for a time. Secondly, the eye becomes perhaps dry, or it may become congested and secrete a puriform fluid, which, drying, closes the lids, or it may become entirely *bloodshotten* or *ecchymosed*, and in very favourable conditions, ulceration, and even opacity of the cornea may result from this taking cold. This is a condition of the parts, though arrived at much more gradually, which we find resulting from the experiments so repeatedly referred to in this paper, and our explanation of them is, that the sensitive fifth nerve becomes excitor through the spinal centre, to the modifications in the circulation, secretion, and nutrition of the eyeball, which acts are under the immediate reign of the ganglionic system. We can observe the same character of phenomena in the secretory lining membrane of the nostril, and also the same exposure to cold may, through the fifth nerve, or other sensitive nerves, excite modified circulation in the fauces and pharynx through the secretory or mixed branches, which, together with the pharyngeal plexus, control the circulation of those mucous surfaces."

In a consideration of the relation of the teeth to the sensory or excito-secretory branches of the trifacial nerve, and through them to the spinal marrow, and thence to the entire system, is to be found, according to Dr. C., nearly all that is necessary for the full portrayal of the excito-secretory system. For, he remarks, in the phenomena which sometimes result from these relations, under particular circumstances, are to be found illustrations of almost every character and degree of modified secretion and nutrition.

In reference to those troublesome cutaneous eruptions so common in children at the period of teething, Dr. C. remarks, no rational and satisfactory explanation of their occurrence as concomitants of teething, had been presented before the enunciation of the doctrine of the excito-secretory function.

"A comprehension of that doctrine," he says, "affords to them a ready interpretation by referring them to the modified action of the secretory system controlling the capillary circulation of the cutaneous surface, which modification is excited through the dental filaments of the fifth pair, the spinal marrow, and that portion of the ganglionic system above referred to. In verification of this view of the influence of these connections, and also of the effect of the local irritation, we ask leave here to adduce an observation, which we are not aware has been recorded elsewhere. It is generally admitted, that at the termination of the period of dentition, that is, when the child has acquired all its teeth, the cutaneous eruption, of whatever nature it may have been, subsides, and the skin resumes its natural condition, the patient not again being liable to its return. This, according to our observation, is generally, but not invariably the case. We have observed certain instances in which the eruption had subsided for several years, when on the advent of the *second* dentition, it came out with almost its former violence and inveteracy, not subsiding until the second period was entirely completed. So frequent has the return of the eruption been a subject of remark with us, that we now seldom encourage parents to expect permanent relief for their children, affected with these eruptions, until after the completion of the second dentition. Again, we find that children who have suffered severely during the period of dentition, are very liable to become affected with *dropsy;* this latter affection frequently presenting itself at the termination of the above cases. Since the announcement of the excito-secretory function of the nervous system, these cutaneous eruptions and dropsical affections which occur during dentition, in our opinion, need no extended and elaborate explanation."

"We are aware that the above phenomena, indicating embarrassed or aberrated action of the secretory system of nerves, might receive an explanation in the fact, that during this period several of the important emunctories of the system, as the liver and kidney, suffer an arrest, or at least, a modification of their eliminatory functions, but we will not contend here for the difference in the value of these two opinions; either one of them can only rationally explain the phenomena, by invoking the aid of the excito-secretory action originated by the irritation caused in the branches of the trifacial nerve, during the evolution of the teeth."

From the foregoing, our readers will derive some idea of the manner in which the excito-secretory function is applied by Dr. Campbell to the explanation of various morbid conditions of the organism. Other of his expositions—which are all ingenious and plausible, and bearing, apparently, the impress of truth—might be adduced. To establish fully the agency of the newly discovered function in the production of the foregoing, and various other abnormal phenomena, will demand, however, a more extended and cautious series of experiments and observations—the combined efforts of many labourers through many years. Dr. C. is nevertheless deserving of the thanks of the profession, for having directed attention to a subject, at once, so interesting and so important, as well as for the efforts he has already made in its elucidation and development.

The volume of essays before us is deserving of an attentive study and careful consideration on the part of every physician; should we have succeeded in directing to it the attention of such as may be inclined to investigate more fully the truths it enunciates, we shall be fully satisfied.

D. F. C.

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Art. XXIV.—*The Enlarged Prostate; its Pathology and Treatment; with Observations on the Relation of this Complaint to Stone in the Bladder.* By Henry Thompson, F. R. C. S., &c. Octavo: pp. 320. London, 1858.

*The Prostate Gland and its Enlargement in Old Age.* By Decimus Hodgson, M. D., Demonstrator of Anatomy in the University of Glasgow. London, 1856.

Diseases of the urinary and reproductive organs have received at all times great attention, and the works treating of them are numerous. The body called the prostate gland, which occupies a very remarkable position, in regard both to the organs of urination and those of reproduction, has attracted much notice. Notwithstanding, however, the many works which treat of this body and its diseases, it must be admitted that there is room for a new one. Recent discoveries in general anatomy, the transactions of learned societies of the past few years, particularly those of the Royal Medico-Chirurgical Society and of the Pathological Society, of London, bear out the correctness of this assertion. In this Journal, in the April and October numbers of the past year, some account was given of several communications made by Mr. Thompson to the Medico-Chirurgical Society; one, concerning the anatomy and pathology of the prostate gland, the other, concerning the nature of certain concretions found therein, and their relation to prostatic calculi. The character of these communications, and the excellence of his work upon a somewhat analogous subject, stricture of the urethra, would lead us to expect much that is valuable in his treatise on the enlarged prostate.

The points to which Mr. Thompson desires especially to request the attention of the scientific inquirer, are briefly stated, in the preface, to be as follows:—

"The assignment of the 'third' or 'middle' lobe, as a separate anatomical portion of the prostate, to the abnormal history of the organ; discussed in the first chapter.

"The analogy between the enlargements and tumours of the prostate and those of the uterus; discussed in the second chapter.

"An examination of the alleged causes of enlargement of the prostate, resulting in new views of this subject; in the third chapter.

"The effects of enlarged prostate in relation to the functions of nutrition; considered in the fifth chapter.

"The researches in relation to malignant and tubercular disease of the prostate; in the ninth and tenth chapters (tenth and eleventh).

"The consideration of 'the bar at the neck of the bladder;' in chapter the twelfth."

The other chapters—there are fourteen altogether in Mr. Thompson's work—treat of the symptoms of enlarged prostate; the diagnosis of prostatic and other obstructions at the neck of the bladder; the treatment of senile enlargement; the treatment of retention of urine from enlarged prostate; enlargement of the prostate from inflammation; prostatic concretions and calculi, and the relation between enlarged prostate and stone in the bladder. It must not be supposed, from having directed particularly the attention of the scientific inquirer to certain portions of his work, that others have been neglected. The subjects, the list of which we have given, as occupying the remaining chapters, have been treated at length; more fully, probably, some of them, as the diagnosis and treatment of enlargement, than in any preceding treatise.

Although physiology is something more than "animated anatomy," and a precise knowledge of structure does not always enable us to decide as to function, still there is a relation between structure and function which should not be overlooked. Experiments skilfully conducted have thrown light upon a few obscure phenomena of the animal organism, but by far the greater portion of the recent progress in physiology has been effected by the advance of our knowledge of anatomy. And when we speak of physiology, pathology also is meant; for all that we know with satisfaction, in pathology, has a physiological basis.

Investigations in minute anatomy, made in late years with so much zeal, have shown us that the body called the prostate gland has no claims to be called "gland" at all; that is, in the usual sense of that term. It should be considered as only an advanced portion of the circular muscular coat of the bladder, having the power of acting independently of the vesical fibres, as is shown in the propulsion of the seminal fluid. A number of small urethral glands are contained in this muscular body, each of which has a separate duct opening into the gutter at the side of the verumontanum. It is the liquid from these glands that gives to the sperm its white colour; it is white, creamy, not at all tenacious, and is mixed with the other five liquids forming the sperm, at the moment of ejaculation.

The views of Mr. Thompson in regard to the normal and pathological anatomy of the prostate are contained in the paper we have already referred to, as published in this Journal, for April, 1857. We have the strongest reasons to believe in their correctness. In the preparation of that paper he made a dissection of sixty specimens of the prostate, removed himself from the dead body, and in its illustration fifty of these specimens, preserved in spirits, were exhibited at the Medical and Chirurgical Society. The existence of a "third lobe," as a fact in normal anatomy, has never been admitted by European anatomists. Cruveilhier says: "In the normal condition, the prostate does not project into the canal of the urethra; but it is not rare to see rising up from the inferior part of the canal of the urethra, at the level of the base of the prostate a more or less projecting tubercle, which forms an obturator more or less complete at the entrance of the canal of the urethra; this is the tubercle designated by Lieutaud under the name of *luette vésicale;* by Everard Home, under the name of *development of the middle lobe of the prostate.* But, on one side, this tubercle belongs to a pathological condition; and, on the other, there is no middle lobe, unless it be desired to give this name to the slightly furrowed and consequently less thick portion, that unites the two lateral halves of the prostate." (*Traité d'Anat. Descrip.*, vol. iii. p. 631, Paris, 1852.) In England and in this country, down to the latest treatises on the subject, a middle lobe is recognized, and any one who would take the trouble to consult the original paper of Home, in the *Philosophical Transactions*, 1806, would be astonished at the insufficiency of the grounds. A "third lobe" was proclaimed after five examinations of the organ by dissection. In these five dissections, the author says, "the appearance was not exactly the same in any two of them." In one of them, "there was no apparent glandular substance" at all in the spot indicated.

We are strongly inclined to agree likewise with Mr. Thompson in regard to the incorrectness of the general opinion as to the frequency of enlargement of the prostate in old age. His opinion is founded upon very numerous dissections, and moreover he finds *the absence of anything abnormal* which it is very difficult and rare to find, and when found is generally to be believed true. Ignorant persons are those most apt to find the most pathological conditions, and this is particularly true of enlargements.

Mr. Thompson examined the prostate in the bodies of fifty elderly people, as they consecutively appeared in the dead-house of a large metropolitan institution, no kind of selection being made. Of the fifty prostates examined, fourteen were affected with unnatural developments in one form or another. Of these, six exhibited numerous isolated tumours in the substance of the lateral lobes. The others show outgrowths, single, binary, or multiple, springing from the posterior median portion. These isolated tumours, as those of the uterus, called fibrous tumours, are formed of the same anatomical elements as the organ in which they are situated; organic muscular fibre. It is an interesting circumstance that the prostate—male homologue of the uterus—should exhibit such striking analogies in pathology with the latter organ.

From the facts he has advanced, Mr. Thompson believes that it may be regarded as established, that enlargement of the prostate, "so far from being a charge invariably, or even usually present in old age, is an exceptional condition. And it may be further regarded as highly probable that a slight tendency thereto, almost, if not quite unrecognizable during life, may occur in about one out of three individuals after fifty years, and that a marked enlargement may be rarely met with in one out of eight—rarely, however, before sixty years of age"—(p. 67.)

The three chapters of Mr. Thompson's work, the 4th, 5th, and 6th, treating respectively of the symptoms of enlarged prostate, of the effects of its enlargement upon micturition, and of the diagnosis of prostatic and other obstructions at the neck of the bladder, are most excellent. We notice with pleasure that he refuses to use the word *incontinence*, in the sense in which it is generally used, that is, as indicating a condition which, so far from being one in which the bladder *cannot retain*, is one in which it *retains too much.* This misapplication of the term has been productive of fatal errors in practice. In his work on stricture, for this reason, the condition described was designated as "retention with incontinence;" in this one he employs the word "overflow," a shorter and preferable term.

In the great majority of cases in which habitual retention of urine with overflow of a surplus portion exists, he does not hesitate to affirm, that the cause is a physical one; in other words, "that there is *an organic obstruction at some part of the urethra*, situated either at its commencement in the neck of the bladder, when it is usually constituted by enlarged prostate; or in a portion of the canal anterior thereto, when it usually takes the form of permanent or organic stricture"—(p. 84.) He does not enter into any discussion of the subject, preferring to regard it as a question of fact, rather than as a theme for abstract reasoning. "Experience alone has led him to reject the impalpable cause, and to appreciate the material one, and to an extent sufficient to warrant him in referring to the fact alone for corroboration of the assertion made above."

The only exceptional cases, he allows, are those in which there is a cerebral or spinal lesion of some kind, which paralyzes more or less completely the nerve functions of motion, voluntary and involuntary, of sensation, or of sensation and motion combined, of the whole body below the situation of the injury, and those cases in which, after voluntary retention of urine, there is over-distension and atony of the bladder. In these latter cases, to which the term of paralysis has been applied, there is no evidence whatever that the lesion consists in any loss or impairment of the *nervous force* transmitted to the viscus; the muscular expelling apparatus of the bladder is overstretched, and unable to perform contraction in a normal manner for a certain time. Paralysis of the bladder—that is, a condition of things in which its nervous supply is either impaired or destroyed—Mr. Thompson does not believe to ever exist. "There is no evidence of the existence of true paralysis—that is, a removal or impairment of nervous influence *limited* to the *bladder*"—(p. 104.)

The paralysis of a muscle, after the section of a particular nerve, is easily understood; but it is very difficult to understand a partial paralysis from a general cause. Nevertheless, such cases are witnessed; every one, for instance, has seen paralysis of the radial nerve, from the effects of lead upon the system; and also, in hysterical women, paralysis of the third pair. There is no reason, therefore, for not admitting partial paralysis, limited to the bladder. Mr. Thompson denies it because he has never seen it; but other persons, well worthy of credit, have reported cases of the kind.

The chapter (6th) on the treatment of senile enlargement of the prostate occupies sixty pages. We think we may safely assert that no preceding author has treated the subject so carefully and so satisfactorily. The subject is divided into three distinct divisions, and they are considered separately, as follows:—

"1. Treatment for the purpose of obviating the results of obstruction caused by enlarged prostate.

"2. The general, or constitutional treatment and management of patients with enlarged prostate.

"3. Treatment directed against the enlargement itself."

This complaint is one generally admitted to be completely intractable, and the surgeon almost invariably limits himself to palliating its most distressing symptoms, and to retarding its progress. Mr. Thompson, however, does not doubt that "the day will come when the complete control of this evil will be in our power, adding another to the already numerous and splendid triumphs of scientific medicine;" and urges with confidence and hope the employment of treatment against it. Though strongly advocating treatment directed against the enlargement itself there is also a most careful description of those means which past experience and skill have placed in our power for prolonging the life and insuring the comfort of the patient.

There exists a certain analogy, as has been already said, between prostatic and uterine enlargement. The influence of iodine and of its congener bromine over these affections of the uterus being testified to by many men of the highest celebrity, it is only a legitimate inference to affirm that there may be good grounds for believing that these remedies may be similarly effectual in those of the prostate. Some years ago, Mr. Stafford, in an "Essay on the Treatment of some Affections of the Prostate Gland" (London, 1840), called the attention of the profession to the use of iodine and its preparations for the removal of prostatic enlargement. His plan consisted in administering iodine internally by suppositories in the rectum, occasionally by the mouth, and in applying it to the prostatic portion of the urethra in the form of a weak ointment. Mr. Stafford affirms to have been successful in a large number of cases, in causing the disappearance of the enlargement. For some reason or other, although very partial to the employment of iodine, and openly declaring his belief in the efficiency of treatment, Mr. Thompson speaks of Mr. Stafford and of his plan of treatment with great harshness. After doubting his powers of diagnosis and his accuracy in reporting, he adds: "All that can be said further is, that the success was marvellous, and that other surgeons have been less fortunate, notwithstanding that Mr. Stafford's experience certainly induced numerous trials of his remedies by others."

The plan recommended by Mr. Thompson himself is the use of the water from the highly charged iodine and bromine springs of *Kreuznach* in Rhenish Germany. Knowing that uterine enlargements were often much benefited by it, he visited the springs for the purpose of inquiring as to its influence upon chronic enlargement of the prostate, and, from the report of the physician, was satisfied that valuable results were obtained from its employment. This water, or ordinary water to which the bittern or mother-lye of the Kreuznach springs has been added, he uses as a bath, and also as an enema. No results are given of the effects of this plan of treatment. We doubt whether many surgeons will make use of it in preference to the treatment recommended by Mr. Stafford, and which is spoken of by Mr. Thompson with such disrespect.

Besides the medical part of the special treatment to be directed against the enlargement, there is also the mechanical. The effect of compression in retarding the progress of morbid growths and enlargements has long been recognized, and is constantly employed with success. The attempt has, therefore, been made to effect the reduction of the enlarged prostate by the same agency. Physick, in this country, attempted to accomplish this object by distending with fluid a small bag of gold-beater's skin, previously rolled up and introduced on the end of a catheter, into the bladder; and by then attempting to withdraw the dilated sac through or into the vesical orifice. Mr. Thompson says: "Provided that, without difficulty or danger to the patient, an efficient degree of compression could be applied with ease and certainty to the prostate and neck of the bladder, I think it reasonable to suppose that considerable benefit might accrue from its application." The instrument he recommends is composed of a catheter, an India-rubber tube fitting over the catheter, and a syringe. When the tube is drawn over the catheter and fastened by a thread of silk close to the handle, on applying the syringe previously filled with water, and making pressure, the fluid passes through the eyes of the catheter, and the lower three inches of the tube become very gradually distended, equally in every direction. The manner of employing the instrument is so simple, that it scarcely requires explanation.

Operations for the excision or the crushing of a protruding portion of the prostate, Mr. Thompson mentions only for the purpose of expressing his disapproval of them. Division of the obstructing portion has been performed, and it was advocated and practised by Mr. Guthrie; this operation, however, is not discussed here, but it is in the twelfth chapter, one devoted to the consideration of "the bar at the neck of the bladder."

The different operations for puncturing the bladder, which, though very rarely, is, nevertheless, sometimes necessary, are judiciously examined. The one, by which an opening is made through the symphysis pubis, a very interesting case of which was reported in this journal for April, 1854, by Dr. Leasure, of New Castle, is thus judged: "The experience of the operation of puncture through the pubic symphysis is not extended enough at present to permit of a comparison being made in regard to its results, with other modes; but that it is sufficient, coupled with the apparent advantages derived from anatomical considerations, to recommend the operation to the test of practice, in order that its merits may be duly ascertained." When fluctuation can be felt with the finger in the rectum, behind the prostate, this is the easiest and safest mode of giving exit to the urine. The great objection to this operation by the rectum is said by Dr. Gross (*Practical Treatise on the Diseases, Injuries, and Malformations of the Urinary Bladder, &c.*, 2d edit., Philad. 1855, p. 389), to be the formation of a vesico-rectal fistula. We are inclined to think, however, that this is incorrect; Mr. Cock, of Guy's Hospital, who has performed this operation twenty-four times, and seen it done at least twelve times more, never saw a fistula left. In fact, there would appear to be difficulty in preventing the opening from closing immediately.[1]

The three following chapters of this work are upon enlargement of the prostate from inflammation; on malignant disease of the prostate, and on tubercular disease and cysts of the prostate. This part of Mr. Thompson's work is not so satisfactory as the rest. Several things of importance have been left unmentioned; for instance, there is nothing said of the necessity of introducing a catheter after the inflammation has terminated in abscess, which has opened into the urethra. Dr. Hodgson, in his work, insists upon the necessity of introducing the instrument, but he advises the use of a small instrument retained in the bladder by the usual means, for "the urine then flows through the instrument without entering the cavity of the abscess, while the small size of the catheter permits the matter to escape by its side." Whenever a catheter is retained in the bladder, at the expiration of twelve hours, or thereabouts, the urine flows away by the side of the instrument, which acts as a sort of conducting tube. It is, therefore, better for the surgeon to introduce the instrument and to draw off the water as often as may be required.

The twelfth chapter is devoted to "the bar at the neck of the bladder;" an affection so closely related to enlarged prostate, by identity of anatomical situation, and of the symptoms resulting, that it is impossible to treat of one without also considering the other. In the majority of cases in which there exists an organic obstruction, having more or less the form of a ridge or barrier, situated at the posterior border of the neck of the bladder, this unnatural elevation is believed by Mr. Thompson to be constituted by an outgrowth arising from the posterior median portion of the prostate. When an obstruction does exist, without the prostate being affected, he believes it to be most commonly owing to an undue elevation of the uvula, associated with hypertrophy of the muscular elements of the bladder, originating in long-continued irritability of the viscus, and generally occasioned by stricture of the urethra or calculus of the bladder. He believes also that a fold of mucous membrane and submucous tissue may form a barrier, though this very rarely happens.

The operations which have been performed and recommended by Guthrie, Leroy d'Etiolles, and particularly by Mercier, for the purpose of practising incisions in this barrier, are described and discussed. Before resorting to them Mr. Thompson prefers to be fully assured that dilatation is unequal to affording relief; for it is a method which has yet to be fairly and effectively employed in these cases.

His views upon prostatic concretions and calculi, the subject of the thirteenth chapter, may be sufficiently judged from the account already given of them in this journal for October, 1857.

In the fourteenth chapter is an excellent account of the relation between enlarged prostate and stone in the bladder. It is a chapter, however, which struck us as being rather out of place, in a work of this kind, and as belonging to one on lithotrity.

Mr. Thompson's work, we feel assured, will be well received by surgeons. The whole of it is valuable; and the first eight chapters are eminently so.

In Dr. Hodgson's treatise, the descriptive anatomy of the prostate, and its general anatomical relations are given in minute detail. They are also correctly represented by plates attached to the volume, among which are a number displaying their pathological alterations. This book loses somewhat of its value by a lack of method in the arrangement of the subjects; in which, we would add, Mr. Thompson's excels. W. F. A.

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[1] See his paper in Medico-Chirurgical Transactions, vol. xxxv.

## Art. XXV.—*A Practical Treatise on the Diseases of Children.* By J. Forsyth Meigs, M. D., Fellow of the College of Physicians, of Philadelphia, etc. etc. Third edition. Carefully revised. 8vo. pp. 724. Philadelphia: Lindsay & Blakiston, 1858.

Of the first two editions of this treatise we expressed, at the time of their appearance, a highly favourable estimate. In the edition before us the work has undergone a very careful revision, while such additions have been made to it as the author's more enlarged experience, and the contributions of contemporary observers, both at home and abroad, have furnished. The treatise will, in consequence, be found a very excellent and faithful guide to the pathology and treatment of the more prominent of the diseases of childhood. Unfortunately, the author has not yet found the opportunity to complete the work, by adding an account of those diseases which were not included in the preceding editions. To the practitioner this is a circumstance of minor importance; but to the student, who consults the work as a complete treatise on the diseases of children, it will be a source of some annoyance to find that he must refer to other works for information in reference to affections peculiar to the period of childhood, on which Dr. Meigs has neglected to treat. So well has the author accomplished his task, in reference to the diseases embraced in this third edition of the treatise, that we most fervently desire that the leisure necessary to pen the chapters still wanting to complete the work in accordance with its title, may be speedily furnished him. D. F. C.

## Art. XXVI.—*Journal de la Physiologie de l'Homme et des Animaux.* Publié sous la Direction du Docteur E. Brown-Séquard. Tome Premier, Janvier, 1858. Paris, J. B. Bailliere et Fils. London and New York, H. Bailliere.

The appearance of a journal devoted especially to physiology, and under the management of one so capable of successfully conducting it as Dr. Brown-Séquard, is an event which all who feel the stimulus engendered by progress in rational medicine, must regard with no ordinary feelings of interest. In whatever light we view physiology, we cannot fail to perceive that on the facts which constitute that science, reposes the whole structure of the healing art, and that with the further development of the former, we have the most ample assurances of continued advancement in the scientific appreciation and treatment of disease.

The success of a journal restricted to the consideration of but one branch of medical science, may be doubted by some, but when we reflect that though cultivated assiduously for centuries, by learned men of all civilized nations, physiology is nevertheless yet in its infancy, we see no reason to anticipate failure. For to whatever point of the science we direct our attention, we find so vast a field for investigation, that one not actuated by the high motive of labouring for the good of his species, might well be dismayed at its contemplation, and falteringly turn aside from a work which requires such unremitting sacrifices for the establishment of the most simple fact.

The perseverance and ability of the editor of the *Journal de la Physiologie*, are ample guaranties that the periodical he has undertaken to conduct, will accomplish much for scientific medicine, and if future numbers reach the standard of excellence attained by the number before us, it will, indeed, be a valuable addition to medical periodical literature.

In order that our readers may form an idea of the subjects treated of, we subjoin a list of the original memoirs:—

1. On the Laws which govern the Dynamical Phenomena of the Animal Economy. By M. Brown-Séquard.

2. Memoir on the Temperature of the Palmiped Birds of the North of Europe. By M. Ch. Martins.

3. Note on the Low Temperature of certain Long-Winged Palmipides. By M. Brown-Séquard.

4. Memoir on some Points in the Anatomy and Physiology of the Mucous Membrane and Epithelium of the Uterus during Pregnancy. By M. Ch. Robin.

5. Researches in regard to the Effect produced on the Circulation by the prolonged application of Cold Water to the Surface of the Human Body. By Dr. H. Bence Jones and M. W. H. Dickinson.

6. On certain Improvements in the means of establishing Artificial Gastric Fistulas. By M. Blondlot.

7. Experimental Researches on the Physiological Properties and Actions of the Red and Black Blood. By M. Brown-Séquard.

8. Experiments with the Stuffs used for Military Clothing, considered as Protective Agents against Heat and Cold. By Dr. Coulier.

9. New Researches on the Physiology of the Spinal Marrow. By M. Brown-Séquard.

10. Experiments on Digestion. By Dr. F. G. Smith (reprint).

11. Experiments relative to the Transformation of Starch into Glucose in the Stomach. By Drs. F. G. Smith and E. Brown-Séquard.

12. New Researches relative to the Importance of the Functions of the Supra-renal Capsules. By M. Brown-Séquard.

13. On the Modifications effected in the Globules of the Blood of Mammals, when injected into the Vessels of Birds, and in the Globules of the Blood of Birds, when introduced into the Vessels of Mammals. By M. Brown-Séquard.

We are unable to notice in detail all the above memoirs, but this is of the less consequence, as the results of several of them have been already published through other channels. Even these, however, contain new facts, and are well worthy of attentive perusal.

The memoir of M. Martins, and the note on the same subject by M. Brown-Séquard, are particularly worthy of consideration, as containing some interesting and accurate results relative to the temperature of the palmiped birds of the North of Europe. From these researches it is seen that some of the long-winged members of the order, especially the fulmar petrel (*Procellaria Glacialis*), possess a temperature markedly lower than would be pre-supposed from a knowledge of their habits.

The paper of M. Coulier, relative to the protecting power against heat and cold possessed by the cloths used for the manufacture of military clothing, though interesting, is not so complete and satisfactory as it should be for the thorough elucidation of the subject.

M. Coulier seems to be unaware of how much has hitherto been done by others in this matter, and that, consequently, he has been anticipated in the more important of his conclusions. The subject of his memôir is of so great interest in a hygienic point of view, that we hope our readers will pardon us, if before stating his results, we recall to mind some of the facts in regard to it, which may be considered as definitely established.

In 1792, Count Rumford instituted a series of experiments relative to the influence of colour over the amount of solar heat absorbed in a given time. He found that, *cœteris paribus*, black was pre-eminent as absorbing more heat than any other colour.

Franklin's researches followed, and were more complete and decisive than Rumford's. This philosopher exposed cloths of different colours, laid on snow, to the heat of the sun, and observed the different relative depths to which they sank. From his experiments, he deduced the conclusion " that black clothes are not so fit to wear in a hot sunny climate as white ones, because in such clothes, the body is more heated by the sun when we walk abroad, and are at the same time heated by the exercise, which double heat is apt to bring on putrid dangerous fevers." He, therefore, thinks that soldiers and sailors in tropical climates should wear white uniforms, and that white hats should be generally worn in summer.

In 1799, Sir Humphrey Davy took up the subject; his experiments were performed with pieces of copper of various colours, on the under surface of which cerate was spread. His results accorded exactly with those of Franklin.

Stark, in a paper read before the Royal Society in 1853, and published in the *Philosophical Transactions* for that year, contributes a good deal of valuable information on the subject. The results which he obtained agree in a striking manner with those of Franklin and Davy, as seen from the following table, in which the several colours experimented with are arranged in the order of their absorptive power:—

| FRANKLIN. | DAVY. | STARK. | |
|---|---|---|---|
| | | Coloured Wool. | Coloured bulb of Therm. |
| Black | Black | Black | Black |
| Deep Blue | Blue | — | Dark Blue |
| Light Blue | — | — | Brown |
| Green | Green | Dark Green | Green |
| Purple | — | — | — |
| Red | Red | Scarlet | Orange Red |
| Yellow | Yellow | — | Yellow |
| White | White | White | White. |

In the *Journal of the Franklin Institute* for November, 1833, Prof. A. D. Bache, of this city, gives the details of a series of experiments which he instituted on the same point. Prof. Bache concludes that the colour of a substance only affects its absorptive power for *luminous* heat, and that if a person keeps in the shade, it is immaterial what is the colour of his clothing.

In relation to the influence of colour over the absorbent power of a substance for moisture, Stark, in the memoir above referred to, furnishes some important results, to which we may briefly call attention.

On the 16th of January, 1833, he exposed during a foggy night 10 grains of black wool, 10 of scarlet wool, and the same quantity of white wool, to the action of the atmosphere. When weighed in the morning, the black wool had gained 32 grains, the scarlet wool 25 grains, and the white wool 20 grains, deposited as frost.

At a time when there was less moisture in the atmosphere, he repeated the experiment. When the wool was weighed, the black had gained 10 grains; dark green 9.5; scarlet 6; and the white 5 grains. It is thus seen, that a direct relation exists between the capacity of a colour for heat and for moisture.

We come now to M. Coulier's conclusions, which are based upon a number of experiments, evidently performed with great care, but which, with the exception of the second, are by no means original. His deductions are as follows:—

1. The colour of the clothing is without perceptible influence over the loss of animal heat.

2. All cloths are capable of absorbing a certain amount of *hygrometric water* [so called on account of its only being appreciated by the balance, or by the lengthening of the textile fibres]; this quantity is greatest for wool, next greatest for hemp, and least for cotton.

3. This absorption is made without the immediate loss of caloric by the human body.

4. The colour of a cloth exercises a great influence over the absorption of solar heat, but whatever may be the character of the clothing, if its exterior surface be suitably modified, all the advantages which white stuffs possess when subjected to the heat of the sun are obtained.

The modification referred to in the fourth conclusion, consists in wearing a white frock over the coloured uniform.

In this country, where our army has so much frontier service to perform, in which the troops in summer are subjected all day on the plains to the heat of an almost tropical sun, and in winter are exposed to snows, rains, and a temperature frequently several degrees below the zero of Fahrenheit, the subject of clothing for the soldier has not attracted that attention from the authorities which it deserves. In winter or summer, in Texas or Maine, in Florida or on the Pacific coast, the clothing of our soldiers is the same, the only difference being, that when occasion requires it, they are allowed to wear their overcoats. The colours (dark blue for coats and light blue for trousers), though very good for winter use, are almost the very worst which could be worn for summer service.

Besides the original contributions, there is in this number of the *Journal de la Physiologie* an excellent *résumé* of the recent progress of physiology, in which abstracts of several important memoirs are given.

In conclusion, as we have said before, we see no reason why the attempt to establish a physiological journal in France should fail. In Germany several have been in successful existence for a number of years, and are among the most valuable medical periodicals published. We are sure that, with the acknowledged ability of the editor, and the aid of the numerous eminent physiologists, who have arisen in France, of late years, the *Journal de la Physiologie* will assume a permanent and exalted position as an exponent of progressive physiological science. W. A. H.

ART. XXVII.—*Comptes Rendus des Séances et Mémoires de la Société de Biologie, pendant l'année* 1856. Octavo, pp. 748. Paris, 1857.

*Minutes of the Meetings and Papers read before the Society of Biology in the year* 1856.

THIS, which is the eighth volume of the *Transactions* of the Biological Society of Paris, is not inferior in interest to those which have preceded it.

Founded in 1849 by the most talented and laborious young men of the French capital, and having as perpetual president M. Rayer, a man who is celebrated not only as a pathologist, but also for his acquirements in natural science, and his generous aid to those who are zealous in its cultivation, this society has, since that time, been yearly giving evidence of its valuable and well-directed labours.

Instituted for the study of the science of organized beings in the normal and the pathological condition, the subject of study embraced by this society is vast. Living beings are not withdrawn from the action of the general forces of nature, and all the phenomena, whether mechanical, physical, or chemical, which occur in inorganized bodies, are observed in them. They are, moreover, subjected to the influence of life, also, a force peculiar to them, and which gives rise in addition to phenomena entirely special. This force—life—co-ordinates the chemical and physical forces so as to produce phenomena seen only in organized bodies, but it is not substituted for these forces, nor does it arrest their results.

The society is composed of titular or active, honorary, associated, and corresponding members. The number of the first is fixed at forty, of the second at fifteen, of the third at twenty, and of the last at eighty, all of the lists being complete. In the whole number, there is not a name which is not well known as that of a distinguished cultivator of science. Among the original members, those by whom the society was founded, and who, to this day, have continued its most active members, are Claude Bernard, Charles Robin, Brown-Séquard, Follin, Lebert, Cazeau, Giraldès, Hirchfeld, Verdeil, and Verneuil.[1]

The comptes-rendus, or minutes, of the meetings of the society, published every year, in one volume, together with the memoirs, form a mass of valuable and interesting information. Among these memoirs, or original papers, are those of Bernard on the pancreatic juice and its part in the phenomena of digestion, on the origin of sugar in the animal economy, on the different salivary fluids, and on the great sympathetic nerve, and especially upon the influence exercised by the section of this nerve upon animal heat; those of Lebert, on the local and general nature of tumours, and upon inflammation; those of Robin, on the development of the substance and the tissue of bones, on erectile tumours, on colloid and epithelial tumours, and upon hypertrophy of the anatomical elements and those of the tissues; those of Sappey, upon the glands of the eyelids and of the pituitary membrane, on the anatomy of the eye, and on the structure of the tonsils and glands at the base of the tongue; the paper of Brown-Séquard, containing his experiments upon the nervous system; and that of Davaine, upon hydatids and their development. These are some of the papers which are of most interest to a medical man. The chemist, the biologist, and the zoologist, will find others of greater interest, probably, in the contributions of Rayer, of Montagne, of Mayer of Geneva, Huette, Gubler, and Davaine.

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[1] The members of the Biological Society hold their meetings in an ancient building, which was formerly a portion of the Convent of the Cordeliers. This building, during the great revolution, was used for the meetings of a society of the most violent of the Jacobins; so that the society of life has taken the place of the society of death.

That the zeal of the members of this society does not diminish is evidenced by the fact that, while the first annual volume of their proceedings contains 362 pages, and the second 461, the present volume contains 748 pages. The nature of their labours may be judged from the table of the original papers, which is as follows:—

The physiological and therapeutical action of the chlorate of potash, by M. Isambert.

Bronzed coloration of the skin, coinciding, in a phthisical patient, with fatty degeneration of the two supra-renal capsules, by M. Second Féréol.

An affection characterized by palpitations of the heart and arteries, tumefaction of the thyroid gland, and double ex-ophthalmia, by M. Charcot.

The mensuration of the facial angle, facial goniometers, and a new facial goniometer invented by the author, by M. H. Jacquart.

Leucocythemia, by MM. Isambert and Robin.

Unilocular cyst of the ovary, by M. A. Laboulbène.

The existence of a co-ordinating principle of writing, and its relations with the co-ordinating principle of speech, by M. Marcé.

Spontaneous amputation of the neck and trunk, by the umbilical cord, in the fœtus, by M. Hillairet.

Physiological study of the venom of the toad, the triton, and the salamander, by M. Vulpian.

Hemorrhages of the ovarian vesicles, by M. Robin.

Natural history of an insect of the order of coleopteri, which produces a gall upon the draba verna, by M. A. Laboubène.

A gall of the tamarix brachystylis, by M. Amblard.

Proof that various tumours, called sarcoceles of the testicle, have their seat in the epididymis, by M. Robin.

The characteristic cavities of bones, by M. Robin.

The anguillulus of smutty wheat, considered in regard to its natural history and to agriculture, by M. Davaine.

The aortic narrowing at the place of junction of the ductus arteriosus, by M. Dumontpallier.

The pathological anatomy of the elephantiasis of the Arabs, by M. Vulpian.

Studies upon monorchidia and cryptorchidia in man, by M. Godard.

W. F. A.

Art. XXVIII.—*Archives of Medicine. A Record of Practical Observations and Anatomical and Chemical Researches connected with the Investigation and Treatment of Disease.* Edited by Lionel S. Beale, M.B., F.R.S., &c. &c. London: John Churchill. 1857. No. 1.

Dr. Beale, under whose auspices the *Archives of Medicine* makes its appearance, is pre-eminently a practical man, and from his knowledge of physiology, pathology, chemistry, and microscopy, every way fitted for the undertaking in which he has engaged, and to which he seems so earnestly to have devoted himself.

In the advertisement prefixed to the first number, Dr. Beale enumerates the following as the subjects upon which he expects to receive contributions:—

1. Practical clinical observations.
2. Original researches in physiology and pathology.
3. Results of the chemical and microscopical examination of the solid organs, and secretions in a healthy and morbid state.
4. Descriptions of different processes employed for demonstrating various structures, and for carrying out scientific inquiries bearing upon medicine.
5. Condensed reports of the researches of observers published elsewhere.

If the anticipations of Dr. Beale are realized, he cannot fail to present a journal capable of conducing in a high degree to the advancement of scientific medicine.

The papers contained in the present number are all of them of a highly practical character, and, with the exception of two, contributed by Dr. Beale himself. Among these is a very interesting one "On the Manner of preparing Injected Preparations of the Liver," which we commend to those engaged in micro-physiological investigations. The papers "On Microscopical Drawings;" "On the Presence of Cholesterine in the Urine;" "On Chylous Urine," and the two articles "On the Anatomy and Pathology of the Liver," are also worthy of attentive perusal.

Dr. Moritz von Bose contributes a paper, to be continued in the ensuing number, "On the Estimation of Urea, Chlorides, Sulphates, Phosphates, and Sugar in Urine volumetrically." This, we believe, is the first attempt to place before the profession in Great Britain a connected and detailed description of those volumetric processes for the analysis of the urine which have for the last few years been so successfully employed in Germany. For ease and certainty in manipulation these methods are unsurpassed; and we know of nothing better calculated to insure accuracy in results, and, at the same time, by facilitating physiological researches, to increase the number of labourers in the field, than the wide-spread diffusion of such papers as the one now under notice.

An article follows, "On the Chemical and Microscopical Examination of Morbid Specimens," in which several interesting cases are cited.

The number, besides several woodcuts, is illustrated with ten octavo pages of lithographs, which, if not executed in the highest style of the art, are amply sufficient for the purpose of correct representation, and add very much to the value of the papers to which they refer.

In the enterprise which he has undertaken, Dr. Beale will, we hope, be sustained by the enlightened members of the profession on both sides of the Atlantic. W. A. H.

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Art. XXIX.—*A Theoretical and Practical Treatise on Midwifery, including the Diseases of Pregnancy and Parturition, and the Attentions required by the Child from Birth to the Period of Weaning.* By P. Cazeaux, Member of the Imperial Academy of Medicine, Adjunct Professor in the Faculty of Medicine of Paris, etc. etc. Second American, translated from the Fifth French edition. By Wm. R. Bulloch, M. D. With one hundred and forty illustrations. 8vo. pp. 992. Philadelphia, 1857. Lindsay and Blakiston.

The Wise Man has said that, "of the making of many books there is no end." Most truly is it, that of the publication of many treatises on the theory and practice of midwifery there is no end. We have already so many admirable works of this kind, from any one of which all the necessary knowledge, so far as that knowledge can be communicated by books, may be acquired, that the student and young practitioner can be at no possible loss in his selection of an obstetrical guide. He will certainly not be disappointed, and can scarcely be led astray in any important particular, whether in relation to doctrine or practical details, should he make choice of the admirable treatise of Meigs, or of the equally excellent one of Ramsbotham, or of Rigby, Lee, Churchill, or Cazeaux. The latter work, in the edition before us, is one of unquestionable excellence. Every portion of it has undergone a thorough revision, and no little modification; while copious and important additions have been made to nearly every part of it. The author has selected from every authoritative source, whatever bears the impress of truth, and has been sanctioned by the concurrent experience of the masters of the obstetric art. Out of these materials he has formed a body of doctrine and of sound practical precepts which he communicates, illustrates, and enforces with great directness and perspicuity. The work is, in fact, precisely what it imports to be, a theoretical and practical treatise on midwifery, based upon the labors of all antecedent writers in that department of medicine, tested and confirmed by the author's own observations and experience.

It is well and beautifully illustrated by numerous wood and lithographic engravings, and in typographical execution, will bear a favourable comparison with other works of the same class.

The translation appears to us, so far as we have compared it with the original, to be faithfully and correctly executed.

D. F. C.

Art. XXX.—*A Manual of Medical Diagnosis: being an Analysis of the Signs and Symptoms of Disease.* By A. W. Barclay, M. D., Cantab. et Edin., Fellow of the Royal College of Physicians; Assistant Physician to St. George's Hospital, etc. etc. Philadelphia: Blanchard & Lea, 1858. 8vo. pp. 423.

The design of this work is to aid the student of medicine in the prosecution of his clinical studies. If it be well adapted to this end, its usefulness will be by no means restricted to the period of medical pupilage, for every practitioner, great as may be his skill in diagnosis, based upon an experience ever so extended, must often feel doubt and difficulty, at the bedside, in the discrimination of diseases. The importance of diagnosis, as a province of medical science and art, can hardly be over-estimated. It does not, it is true, constitute the whole of medical science and art. The practice of medicine involves something more. But it is the keystone of the arch. Without it, therapeutics are aimless, or as likely to be directed for evil as for good. All medical experience, whether it be confined to the individual, or contributed to the public stock, is either worthless or pernicious, unless based on a correct discrimination of diseases. In view of the importance of the subject and the paucity of treatises devoted to it specially, it was quite unnecessary for the author to apologize for his undertaking.

After introductory remarks, the consideration of the method of diagnosis, etc., the author treats of the objective and subjective phenomena referable to the general condition of the patient; febrile diseases; rheumatism and gout; poisons and entozoa; diseases of uncertain or variable seat; chronic blood ailments; depraved constitutional states, and quasi-nervous conditions. These occupy about one-third of the volume. The remainder is devoted to the diagnostic phenomena pertaining to particular anatomical systems and organs. Fifty-eight pages are appropriated to the semeiology of diseases of the brain and nerves; diseases affecting the intra-thoracic viscera occupy over an hundred pages; fifty pages are allotted to diseases of the organs of digestion; nearly the same number to diseases affecting the genito-urinary system; and nineteen pages to diseases of the skin. The work is furnished with a copious index in addition to a table of contents.

The author does not claim to have advanced any novel views. Without aiming to enlarge our knowledge of medical diagnosis, his object is to present an analysis of the symptoms and signs of disease, already sufficiently established.

The originality of the work is in the arrangement of subjects and the manner of making the reader acquainted with well-known facts. We think it would have been better had the plan of the work been either more or less comprehensive. As it is, he gives us as much, but not much more, relating to diagnosis, than is embraced in most of the treatises on the practice of medicine. A volume of a little over four hundred pages is insufficient to do justice to the diagnostic points involved in the discrimination of nearly all the diseases in the nosological calendar. In giving to the work so wide a range, and yet restricting its size within moderate limits, a degree of condensation was necessary, which renders it less readable and satisfactory than if the author had accorded to himself greater space; and if a larger book was considered objectionable, we cannot but think that the work would have been more attractive and useful had its scope been less comprehensive.

In several instances the *signa diacritica* of diseases are treated of so briefly as to be likely to leave in the mind of the inexperienced reader an erroneous impression respecting the difficulty of the differential diagnosis. As an example, we may specify croup. The diagnosis of this affection is considered in a page and a half, and the distinctive features of true, as contrasted with those of false croup, occupy twelve lines! Again, pleurodynia, as distinguished from pleurisy, is disposed of in a single paragraph; and the diagnostic points which characterize intercostal neuralgia, are not even alluded to. Under the head of "alterations of sensibility," we were disappointed in finding no reference to the hyperæsthesia of the abdomen, which simulates some of the most prominent of the symptoms of peritonitis, and not unfrequently misleads the young practitioner; nor is this condition mentioned under the head of peritonitis. We cite these simply as illustrations to which others might be added.

We have not proposed to ourselves to write a critical review of the work. Were we to do so, we should be compelled to notice several inaccuracies which arrested our attention during its perusal. Some of these seem to arise from want of care in the composition. We cannot, for example, suppose that, with due reflection, a practitioner of Dr. Barclay's experience would make the following statement: "Irregularity of pulse invariably indicates disease of the heart" (p. 190). As another instance of a careless mode of expression, we quote the following: "The duration of the different affections of the chest varies in a very remarkable degree; it is but a few days in acute inflammation; in chronic bronchitis and phthisis, the more severe symptoms may be spoken of as having existed for some weeks; there have been probably months of continuous ailment in galloping consumption, etc." (p. 189). In the same category belongs the following: "Erosion is found either as the result of ulceration of the mucous membrane, or as the fatal termination of an aneurism when the vessel has burst into the stomach. Both forms of hemorrhage are severe and very often fatal" (p. 96).

The reviewer, however, might take exceptions to certain passages on other grounds than carelessness of expression. For example, when the author states that the blood in hæmatemesis may be derived "by exudation from the surface of healthy mucous membrane" (p. 96). Merely as evidence of the correctness of the remark just made, we quote the following: "The name of *remitting fever* is applied to a disease peculiar to warm climates. It is now very generally believed to be only typhus as modified by atmospherical influences of the condition of the nervous and sanguiferous systems of Europeans residing in tropical latitudes" (p. 57). This sentence includes all that is said respecting the remitting fever of adults.

As a candid reviewer of the work, we should feel bound to criticize the author's style, which is deficient in the directness and clearness so desirable in the composition of a scientific treatise. But with this defect and others to which we have briefly alluded, the work may be studied with profit both by the medical student and practitioner. We confess that it does not come up to our idea of a work on Medical Diagnosis, such as we believe might be written and such as it seems to us is much to be desired; but, in justice to the author, we freely admit that its short-comings are in a great measure due to the incompatibility of its size and scope. A. F.

Art. XXXI.—*On the Diseases, Injuries, and Malformations of the Rectum and Anus, with Remarks on Habitual Constipation.* By T. J. Ashton, Surgeon to the Blenheim Dispensary, &c. &c. Second edition, London, John Churchill, 1857. 8vo. pp. 396.

The success of this book of Mr. Ashton's and of the *Clinical Lectures* of Mr. Quain, and also of the works of Syme and of Curling, would seem to show that good treatises on diseases of the rectum are in extensive demand with British readers. A part of this demand, perhaps, may come from the victims of rectal maladies themselves; still, the great majority of purchasers must be regular practitioners, who prove, by their eagerness in securing all information on the subject, its urgent interest and importance.

Certain it is that there are few forms of human ailment more difficult to the surgeon and distressing to the patient, or in which both parties are more likely to look everywhere for assistance and relief. We cannot help feeling considerable surprise, therefore, that the excellent monograph of Mr. Bushe which was published in this country some twenty years ago, and is still very nearly equal, if not in some respects superior, to either of the British publications just alluded to, should neither have gone to a second edition, nor had an original successor, from the American press.

We regret this particularly, since the volume now before us, though containing a large amount of useful matter and numerous cases and observations which are entirely its own, nevertheless owes to the pages of Dr. Bushe some of its best parts. To such an extent, indeed, have the appropriations of whole successive pages, without allusion to their source, availed our author, that, in this instance at all events, he might have followed the more humble example of his American confrères, and adopted, with propriety, if not advantage, the much abused practice of reprinting with notes and additions, which has excited the virtuous indignation of so many of the self-approving, and the interested purists on both sides of the Atlantic.

Mr. A. gives ample evidence, however, in the original portions of his book, of the ability to sustain himself without resorting to the labours of his predecessors; and he has made so many additions to his previous edition, suggested by greater experience, extended reading and accumulated notes of cases, that it is a great pity that he did not avail himself of the opportunity to devote the additional time and labour needed to expurgate the new edition by the substitution of his own language and arrangement, wherever necessary, for that of Mr. Bushe, and by the distinct acknowledgment and reference to the same authority for cases and other matter presented verbatim in the first edition, but without quotation marks or any definite citation.

As this act of simple justice to his own production, as well as to one which he justly acknowledges to have been his ablest monitor and the most complete work of its day, does not appear to have been accomplished, we cannot regard the essay of Mr. Ashton as entitled to rank as an original work with those of Syme, Curling, or Quain, and still less with its model, that of Mr. Bushe. Nevertheless its merits as a practical instructor, well arranged, abundantly furnished with illustrative cases, and clearly and comprehensively, albeit too diffusely written, are incontestable. They have been sufficiently indorsed by the verdict of his countrymen in the rapid exhaustion of the first edition, and they would certainly meet with a similar reward in the United States were the volume placed within the reach of American practitioners.

After a short and sensible introduction, from which we shall quote a few paragraphs, directly, he discusses the various affections of the rectum in twenty chapters. Each of these chapters is concluded with a series of cases presenting clinical examples of the disease with which it is occupied. These diseases are severally discussed at greater or less length, according to their importance, in the following order: Irritation and Itching of the Anus; Inflammation and Excoriation of the Anus; Excrescences of the Anal Region; Contraction of the Anus; Fissure of the Anus and Lower Part of the Rectum; Neuralgia of the Anus and Extremity of the Rectum; Inflammation of the Rectum; Ulceration of the Rectum; Hæmorrhoidal Affections; Enlargement of Hæmorrhoidal Veins; Prolapsus of the Rectum; Abscess of the Rectum; Fistula in Ano; Polypi of the Rectum; Stricture of the Rectum; Malignant Diseases of the Rectum; Injuries of the Rectum; Foreign Bodies in the Rectum; Malformations of the Rectum and Anus; Habitual Constipation.

The professional reader cannot fail to meet with a great amount of information, upon numerous important questions suggested by the various captions of the formidable list above enumerated, which is probably better and more fully given in the chapters of Mr. Ashton than in those of any other author with which we are acquainted. We are so well satisfied of this that, were it not for the embarrassment inseparable from the palpably non-original character of some portions of his volume, our brief notice might have been extended into an elaborate review. The subject is so important, and so interesting to all medical inquirers, and comes home to more or less of the personal experience of so large a majority of all classes of society, and yet receives so little formal attention in our journals as well as in the text-book and lecture-room, that no reasonable opportunity ought to be neglected to arouse attention to its study.

In the absence of a methodical analysis and discussion of Mr. Ashton's work, we cannot do better, in order to show his estimate of the subject, and his philosophical and practical mode of treating it, than to conclude with the following quotation from his introduction:—

"In the whole range of surgical pathology no class of diseases among civilized communities is so prevalent, causes more suffering, or induces so many varied and distressing sympathetic affections as those of the rectum; happily for the sufferers none succumb more readily to judicious, and, in the majority of cases, to simple treatment, when it is put in force at an early period of the malady; but unfortunately, as it often happens, from a mistaken delicacy on the part of the patients, or from some other cause, proper advice is not sought till the constitution has become seriously deranged, or the local affection no longer endurable; or it may be that, under preconceived and erroneous notions as to the nature of the affection, or from the prominence and severity of some one of the sympathetic effects, the sufferers are induced to adopt a variety of empirical remedies which fail to afford the desired relief and restoration of health, and which are often productive of the most pernicious results.

"From the important functions of the rectum, from the constant or recurrent pain attending diseases affecting it, induced each time the bowels evacuate their contents, and the serious constitutional disturbance these diseases excite, they require the careful attention and deep consideration of the surgeon. In past ages and in the present time a popular idea has prevailed that a deeper knowledge of, and a more intimate acquaintance with, the diseases of any certain organ is obtained by an exclusive consideration of that particular part; but no greater fallacy can be conceived, it being only by a comprehensive view, and after due consideration of all the symptoms produced, and the various phases presented by disordered function and organic change in the various parts of the animal economy, that a just conclusion as to the *fons et origo mali* can be arrived at. Perhaps few classes of disease exemplify the necessity of a wide and mature consideration more than those implicating the rectum, either primarily or secondarily; for the same symptoms will often be found existing under the opposite conditions of cause and effect. Thus, in the female, many instances have occurred of stricture of the rectum being supposed to exist, and a long and useless treatment had recourse to, when ultimately all the patient's sufferings were found to depend on a displaced uterus, or on some morbid enlargement or growth of that organ; and the converse is not unfrequently the case, of a patient being treated for leucorrhœa or uterine disease, whilst the real source of the symptoms has been in some affection of the rectum. In the male also, will be observed stricture of the urethra, diseases of the prostate gland and bladder simulating those of the rectum; or, on the other hand, diseases of this portion of the alimentary canal producing irritability and other disturbance of the genito-urinary organs. Nor is it in contiguous parts alone that the reaction of one organ on the other is met with, it is necessary therefore to bear in mind the more remote sympathies induced in the cephalic, thoracic, and abdominal viscera, as evinced by headache, vertigo, impaired vision, palpitation of the heart, gastric distension, pain, and sickness; and deranged secretion from the kidneys, as exhibited by the various urinary deposits.

"Formerly some of the affections of the rectum, which in reality are very simple in themselves and easily relieved, rendered the subjects of them the victims of the most painful and in many cases dangerous operations. But by the advance of surgical science generally, and the study and observation of these particular diseases, even the most painful of them may generally be remedied by medical treatment; and when an operation is necessary for the removal of morbid structure or for the purpose of inducing a healthy reparative process, it is simple in character, quickly performed, occasioning but a slight amount of pain, and confining the patient for only a very limited period. Thus fistula in ano, which, at a comparatively recent period, was considered among the heaviest afflictions that flesh is heir to, from the barbarous treatment that was then practised and considered necessary, as a consequence of the false notions and erroneous pathological principles that prevailed, and which led to the scooping out of the parts in the track of the fistula, or to the extensive destruction of the surrounding tissues by corrosive unguents, is now remedied by a slight incision, performed in a few seconds, and not occasioning the loss of more than a few drops of blood. It was only a few years since it was deemed essential for the cure of fissure of the anus to entirely divide the sphincter muscle, but it is now proved that when an incision is required it is not necessary to make it more than a few lines in length, and to extend it no deeper than through the mucous and submucous tissues. In all operations about the anus the general rule in surgery, that of not removing more of the integument than is necessary, cannot be too forcibly insisted on; for if this is not observed the patient will be doomed to much inconvenience and misery by the contraction that ensues.

"The constitutional origin of these local affections and their reaction on the general system, when their cause has been extrinsic, must always be borne in mind, for if this be overlooked, our hopes of success in the treatment will often not be realized.

"Besides prescribing proper remedies and giving strict injunctions with regard to diet and exercise, it is advisable that the surgeon should apply the dressings with his own hands, for though there is no difficulty in the matter, and little skill required, yet it is essential to the comfort and recovery of the patient that they should be accurately and properly adjusted; nurses and attendants, from not thoroughly apprehending the object to be attained, are too apt either to cram and distend the parts with the dressings, or not to approximate them with sufficient nicety; the surgeon should also exhibit the enemata, unless he has some intelligent and trustworthy person on whom he can rely. These matters may appear comparatively trifling, but if they pass unattended to we shall often be disappointed in the result of our treatment, let it in other respects be ever so skilfully and well directed"—pp. 1–5.

We are satisfied, after a careful examination of the volume, and a comparison of its contents with those of its leading predecessors and contemporaries, that the best way for the reader to avail himself of the excellent advice given in the concluding paragraph above, would be to provide himself with a copy of the book from which it has been taken, and diligently to con its instructive pages. They may secure to him many a triumph and fervent blessing, the value and strength of which can be known only to those who have been scorched in the furnace of affliction, the fires of which, it is their province to extinguish.

E. H.

Art. XXXII.—*Plates Illustrative of Wilson on Diseases of the Skin.* Fourth Edition. Philadelphia, Blanchard and Lea, 1857.

In the Number of this Journal for Oct. 1857, will be found a review of the fourth edition of *Wilson's Treatise on Diseases of the Skin,* in which the highly scientific and practical character of the work is pointed out, and its great merits as a guide to a knowledge of the nature of those diseases, and of the best means of treating them, are fully considered.

Although more than a year has elapsed since the publication, in this country, of the text of the work, the illustrative plates have only just now been issued. While we think we have reason to complain of this delay, we are forced to admit that it must have required some time to execute these plates, in the style in which they are now presented to us. For beauty of drawing, accuracy of illustration, and delicacy and finish of colouring, these illustrations are superior to anything of the kind hitherto published in this country.

The volume contains nineteen plates.

Plate I. represents, in eight figures, the structure of the scarf skin.

Plate II. exhibits the anatomy of the sensitive skin and nail, in six figures.

Plate III. contains eighteen figures, illustrating the anatomy of the sebiparous glands.

Plate IV. exhibits the anatomy of the hair, in sixteen figures.

Plate V. represents two views of the acarus scabiei magnified 107 times, a view of the fore feet magnified 456 times, and two ova of the animalcule.

Plate VI. contains ten figures, illustrative of the structure of warts and corns, together with some diseases of the sebiparous glands.

Plate VII. represents congestive inflammation of the derma, in its several forms—urticaria, roseola, and erythema.

Plate VIII. represents the asthenic group of effusive inflammation of the derma—pemphigus, rupia, in their various stages and several varieties.

Plate IX. contains the delineation of the sthenic variety of effusive inflammation of the derma—herpes and eczema, with their several species, and at different periods of their course.

Plate X. represents suppurative inflammation of the derma—impetigo and ecthyma, their species and various appearances.

Plate XI. is devoted to the delineation of the depositive inflammation of the derma—lichen, strophulus, prurigo, and their several species.

Plate XII. presents representations of the squamous inflammations of the derma—lepra, psoriasis, and pityriasis, and their several species.

Plate XIII. represents lupus non exedens, taken from a characteristic case which had persisted for thirty-three years.

Plates XIV. and XV. contain representations of the diseases of the hair-follicles, and hairs—acne, sycosis, favus, trichosis.

Plate XVI. represents various exanthematous and papular syphilitic eruptions.

Plate XVII. represents tubercular syphilitic eruptions.

Plates XVIII. and XIX. contain representations of various syphilitic eruptions, and of diseases arising from syphilitic poison.

It cannot fail to strike the reader that this is a very complete atlas of Dermatology, and we feel sure that, on examination, he will be satisfied with its accuracy and artistic execution.

# QUARTERLY SUMMARY

OF THE

# IMPROVEMENTS AND DISCOVERIES

IN THE

# MEDICAL SCIENCES.

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## ANATOMY AND PHYSIOLOGY.

1. *Choroid Plexuses of the Human Brain.*—Up to the present time anatomists have not agreed on several points in the anatomy of the centres of the nervous system, especially on the existence or not in adult age of a canal in the interior of the cord, easily to be observed in fœtal life; or whether there be a communication of the subarachnoid space with the ventricles of the brain, and the corresponding space in the cord, or not, etc. Professor Luschka, of Tubingen, well known to anatomists by his treatise on the anatomy of the generative organs, has taken up some of these doubtful points, and brought them, as it seems, to a satisfactory conclusion, chiefly by his researches on the bodies of three healthy criminals who were executed at Tubingen.

It follows from the researches of Professor Luschka, that the existence of a canal in the interior of the cord in adult age is in some cases beyond doubt. Often, however, this canal seems to be completely obstructed and filled by cellular tissue, epithelium, and amyloid corpuscles.

The communication of the subarachnoid spaces with the ventricles of the brain, and with the subarachnoid space of the cord, has recently been denied by Professors Virchow and Kölliker at Wurzburg. Professor Luschka, however, proves the existence of this communication by anatomic preparations, by experiments on dead bodies, and by appeal to well-established surgical facts, so that we can no longer doubt that there is really a floating to and fro of the cerebro-spinal fluid from the brain to the cord, and *vice versâ*.

As the arachnoid membrane spans like a bridge over the convolutions and furrows of the upper surface of the brain, the pia mater being in the depth of these furrows, there must be spaces filled by fluid, and these are in open communication with each other. Similar spaces or sinuses exist on the base of the brain, out of which cerebro-spinal fluid flows in cases of fractures of the skull. The largest subarachnoid sinus on the base of the brain communicates with the fourth ventricle, and thereby with all the ventricles of the brain. From this space may be drawn a very large quantity of cerebro-spinal fluid, as well in the dead human body as in the living animal, the whole mass of which has certainly not been contained in this single space, but has come from the other spaces with which it is in open communication.

It has been proved by surgical observations and *post-mortem* examinations made by Sir Charles Bell and Guthrie in this country, by Laugier and Chassaignac in France, and by Dieffenbach and Wutzer in Germany, that in cases of fracture of the sphenoid bone some cerebro-spinal fluid flows from the nostrils; this proceeds from a subarachnoid sinus lying between the crura cerebri, the margin of the pons Varolii, and the commissure of the optic nerves, corresponding to the sphenoid bone. It has equally been proved that in cases of fracture of the petrous bone, cerebro-spinal fluid flows from the ear; then the walls have been torn of the subarachnoid sinus on the anterior margin of the pons Varolii, just at the conjunction between the petrous part of the temporal bone and the margin of the body of the occipital bone.

The experiments made by Professor Luschka for proving the existence of a communication of the different subarachnoid spaces with each other, and with the ventricles of the brain, are interesting and conclusive. A fresh corpse was suspended by the feet for four hours, so that the head hung quite free. Then the skull-cap and the dura mater were taken off. The arachnoid membrane was found very much enlarged by fluid collected under it, and in some places was prominent like a bubble. It was then cut open, and one and a half ounce of cerebro-spinal fluid flowed out. Another corpse having been suspended by the head during five hours, the skull-cap was removed, and the dura mater cut open. The subarachnoid spaces now appeared quite empty, and the arachnoid membrane sunk into the furrows of the brain. The head of another body was cut off at the fifth cervical vertebra, a tube introduced under the arachnoid membrane, and some ink mixed with water driven in by very gentle pressure of a syringe. Some time after, the head was held in an inverted position, in order to bring the fluid into the subarachnoid spaces and ventricles of the brain more by their specific weight than by the pressure of the syringe. The skull-cap and the dura mater were then removed, and the spinal fluid was not only seen on most of the parts of the hemispheres of the brain, and in the sinuses at the base of the brain, but likewise in the fourth ventricle, from which it had even come through the aquæductus Sylvii into the third ventricle.

For imitating artificially such fractures of the skull as are connected with loss of cerebro-spinal fluid, Professor Luschka perforated, by means of a trephine introduced into the nose, the body of the sphenoid bone, the dura mater and the arachnoid membrane. Instantly a clear fluid flowed out, and a much larger quantity could be drawn off by a syringe. Further, he introduced the trephine into the external opening of the ear, and perforated the membrana tympani and the labyrinth in the direction of the internal opening of the ear, with the same result.

Finally, air was blown into the subarachnoid spaces of the cords of three men who had just been decapitated, and in whom all the cerebro-spinal fluid had come out through the widely opened subarachnoid space of the cord. The air penetrated from this space into the subarachnoid spaces, as well as into all the ventricles of the brain. This fact alone would leave no doubt about the communication between all the subarachnoid spaces and with the ventricles.—*Med. Times and Gaz.*, Jan. 16, 1858.

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2. *Histology of the Supra-Renal Capsules.*—Dr. Harley, in a paper on this subject, read before the Royal Medical and Chirurgical Society (Dec. 8th, 1857), began by pointing out that the supra-renal capsules could not properly be said to diminish in proportionate size and activity of function with advancing years. He placed upon the table several preparations of supra-renal capsules, taken from individuals of different ages, to prove that their development proceeded at a certain ratio after birth. He moreover stated, that as they did not become proportionally more atrophied in old age than many of the other organs, it might naturally be supposed that they had a certain function to perform in adult as well as in fœtal life. Dr. Harley then called attention to the great variety of size and shape of the supra-renal capsules throughout the vertebrata, and afterwards proceeded to point out the appearances presented to the naked eye by healthy supra-renal capsules. He denied the existence of any large cavity in the centre of the healthy human supra-renal capsule, and said that when such was found it was the result either of accidental rupture of the medullary substance, or as the effect of disease. He pointed out, however, the existence of a number of small sinuses in the centre of the organ. Dr. Harley said that the cortical and medullary portions of the supra-renal capsules, which are so different in colour, have equally distinct microscopical characters. The former, which constitutes the greater part of the organ, consists of a number

of cells, arranged in irregularly-sized rows in a fibro-areolar matrix, the rows of cells appearing like a number of dark-yellow columns placed perpendicularly to the surface. The cells, when examined individually, are seen to be composed of a homogeneous cell-wall, filled with granules, pigment, and some fat-globules. Each cell possesses a well-marked nucleus, although it is not always visible without the employment of reagents. The easiest way to demonstrate the existence of a nucleus, the author said, was to colour the cells with carmine.[1] When floating free in the field of the microscope, the cells appear irregularly round; but when grouped together, they have a somewhat polygonal form. The cells are arranged in a number of larger and smaller masses, which are placed in regular rows, and thus give rise to the columnar appearance. In some cases a column is composed of several cell-masses of different lengths, placed end to end; in others it consists almost entirely of one long cell-mass. Each column, as well as each cell-mass, is separated from the others by delicate fibrous tissue, in which is included the vessels and nerves. Sometimes the cell-masses present the appearance of long tubes, inclosing a single straight row of quadrilateral cells. Each cell-mass is closed at the extremities, and is surrounded by a delicate homogeneous membrane. The dark slate-coloured medullary substance of the supra-renal capsules has a very different structure from that just described. It is composed of a network of fibres, in the meshes of which are a number of large nucleated cells, which have been described by various writers as ganglion corpuscles. Dr. Harley thinks, however, that these, like the cells in the cortical substance, are true secreting cells. The supra-renal capsules are very freely supplied with bloodvessels. Their course and distribution were minutely described. The author concluded his communication by making a few remarks on the supposed functions of the organ, in the course of which he observed that in the supra-renal capsules of the frog he had found blood-corpuscles in various stages of development. Each point of importance in the paper was fully illustrated by diagrams and microscopical preparations.—*Med. Times and Gaz.*, Dec. 19, 1857.

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3. *Function of the Supra-Renal Capsules and their supposed Connection with Bronzed Skin.*—The *B. and F. Med.-Chir. Rev.* for Jan. last contains a report of some interesting experimental investigations relative to these questions by Dr. George Harley. The following are his conclusions:—

1st. The supra-renal capsules are not solely fœtal organs.

2d. The supra-renal capsules are not absolutely essential to life.

3d. The removal of the right is generally more fatal than removal of the left capsule.

4th. That convulsions do not necessarily follow the removal of the capsules.[2]

5th. That the absence of their function (in rats) is attended neither by great emaciation nor debility.

6th. That when death follows upon the extirpation of the supra-renal bodies, it is in most cases in consequence of the injury done to the neighbouring tissues; perhaps, most frequently the mutilation of the ganglionic system of nerves.

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[1] This is a new process lately discovered in Germany. It was very briefly described by Dr. Harley. The principle of "imbibition," as it is called, is founded upon the fact that various animal tissues absorb and retain pigments with different degrees of avidity. Thus, for example, granular tissues possess a special attraction for colouring matters. Homogeneous substances, on the other hand, display but a feeble affinity for them. A cellular is consequently more readily tinged than a fibrous structure; and in the tissues composed of aggregated cells, various parts are coloured in different degrees of intensity. Thus the homogeneous cell-wall retains its colourless appearance long after its granular contents have become deeply tinged, and the nucleus, which is usually the most granular part of the cell, has become of a prominent dark hue.

[2] In a letter dated Nov. 15th, Professor Virchow informs me that he also has extirpated the supra-renal capsules, without having noticed the derangement of the central nervous system mentioned by Brown-Séquard. I should add, that I have seen two animals suffer from convulsions after extirpation of the capsules. One, a cat, died soon after, having slight tetanic symptoms.

7th. Absence of the function of the supra-renal bodies is not proved to have any special effect in arresting the transformation of hæmatin, or in increasing the formation of blood crystals.

8th. The suppression of the supra-renal capsular function is not attended by an increased deposit of pigment in the skin or its appendages (in rats).

9th. The problem of the connection of bronzed skin and supra-renal capsular disease is more likely to be solved in the dead-house than in the physiological laboratory.

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4. *Variations of the Colour of Venous Blood.* By Prof. CLAUDE BERNARD.—From the period of the discovery of the circulation, two descriptions of blood have been recognized; the one red or arterial, the other black or venous; and so characteristic has this difference in colour of the arterial and venous blood been considered, that it has served since the time of Bichat for the anatomical division of the circulatory organs. The facts now about to be mentioned will prove that henceforth we cannot regard as synonyms the terms venous and black blood; some venous blood being found, in the normal condition, as red as arterial, and even sometimes red and sometimes black. But what will most interest the physiologist is to learn that these variations in the colour of venous blood correspond to different determinate functional conditions of the organs.

As long since as 1845, M. Bernard, while experimenting upon dogs on the eliminatory power of the kidney, was surprised at finding that the blood which left that organ by the vein was as red as that which entered it by the artery. Latterly, he has resumed the investigation of the subject at the College of France. The same phenomenon that had formerly been observed in the dog presented itself in the rabbit, and the red blood of the renal veins arriving and visibly mingling with the black blood of the vena cava inferior. The lumbar veins, on the other hand, discharged black blood very near the renal veins, as did also a small muscular vein which opened into the left renal vein. On multiplying the experiments, and varying the condition of the observation, it was soon found that the usual red colour of the blood of the renal vein might change in shade, and, under the influence of certain circumstances, become completely black. Thus, contradiction would take place if we were contented with the announcement of a single observation. This may unfortunately be almost always the case in physiology, when we fail to distinguish amidst such complex phenomena, the eminently variable conditions which every living organism presents.

Having exhibited the two possible appearances of the blood of the renal veins, the next point was to examine what relation they held to the performance of the function of the kidney. To this end there was placed in the ureter a small silver tube, by which the urine was observed to flow drop by drop, almost continuously, as it is known to do. It was then found that the blood of the renal vein, as well as the tissue of the kidney, continued completely red as long as the urine flowed abundantly by the tube; but that this flow ceased to take place under the influence of circumstances which, while they rendered the blood of the renal vein black, gave at the same time a bluish tint to the kidney itself. Hence it would seem that the red colour of the blood of the renal vein was referable to the functional activity of the kidney, and its black colour to the condition of repose or cessation of function. Moreover, it was found that the nature of the reaction of the urine excited no influence on the phenomenon; the blood of the renal vein being alike red in the dog with acid urine and in the rabbit whose urine is alkaline during digestion and acid after twenty-four or thirty-six hours of abstinence.

Without enumerating the various influences that are capable of disturbing the secretion of the urine, and leading to a change in the colour of the blood of the renal vein, the author contents himself with adverting to the perturbation that may ensue from the mode of operating. If it be desired to observe the red colour of the venous blood, the abdomen must not be largely opened and the intestines displaced, for then suppression of urine will almost immediately ensue, and the blood in the vein will often become as black as that of the vena cava. A small opening should be made in the lumbar region, and especially on the left side, the left renal vein being more easily exposed in consequence of its greater length. Through the same wound the ureter may afterwards be isolated, so as to introduce the silver tube, in order to make certain whether during observation the function of the kidney continues to be carried on or not.

From what has been said it clearly results that the blood of this vein, presenting habitually a red colour in connection with the formation of urine, which is almost continuous, does not correspond with the definition of venous blood already given. The first question that presents itself to the mind is whether this is an isolated fact, special to the kidney, or whether it may be extended to the secretory organs, whose function is, in like manner, the separation of a special organic fluid in their tissue. The submaxillary gland of the dog offers great facilities by its superficial and isolated position for the investigation of this point; the numerous anatomical varieties which its vein exhibits in nowise interfering with the observation of the physiological phenomena. In the first experiment the blood it contained was found as completely black as the darkest venous blood; but this arose from the fact of the secretion by the gland, which is intermittent, not then being active. When, however, some drops of vinegar were instilled into the mouth of the animal, which by its reflex action induced the secretory activity of the gland, the blood gradually but rapidly exchanged the black for the red colour, the black colour being again restored when the secretion had ceased. In order to render the interpretation of the phenomenon yet more positive, a small silver tube was introduced into the exposed excretory canal of the gland, and the nervous branch of the lingual nerve going to the gland was isolated. It was then found that as long as the organ remained in repose nothing passed by the tube, and black blood passed through the vein; while, whenever the nerve of the gland was excited by galvanism, and secretion was produced, the colour of the blood became red, regaining its black colour when the secretion was arrested after the cessation of the stimulation. The trial was made several times, and with similar results. There was always an interval of some seconds elapsed between the production or the cessation of the stimulus and the changes of colour in the blood, as if the gland required a short period for the discharge of the blood it already contained. Moreover, it was observed that the blood flowed always more abundantly when red, that is, during the state of functional activity of the organ, than when black, the organs being then in a state of repose.

These two series of results obtained from the kidney and the submaxillary gland certainly do not constitute isolated facts; and the same observation should doubtless be extended to other glands. The investigations as yet made by the author on the parotid and on the glands of the alimentary canal have furnished similar general results; but the study of the subject will only be complete when each particular gland shall have been experimented on.

"It results from the facts now stated, that if in the physiological condition we may still designate arterial blood as the red blood, the appellation of black blood cannot in this general manner be conferred on venous blood. We have seen, in fact, that the venous blood may be found red or black in secretory organs, accordingly as these are observed in a state of activity or repose. This consideration of the activity and repose of the organ, which correspond in some degree to its statical and dynamical conditions, appears to me to be an important point for introduction into the chemical and physiological study of the blood. In fact, it is not alone by its colour that the venous blood of an organ at rest differs from the venous blood of an organ in activity; but it presents also other important differential characters, which much depend upon a profound difference of the chemical constitution. Thus the venous blood of the kidney performing its function, which is red, is more diffluent, and sometimes even presents no coagulum; while the blood of the same vein, when the kidney has ceased to act, becomes black, and presents a consistent coagulum, etc. Without doubt physiologists and chemists have already learned that venous blood cannot, like arterial blood, be everywhere regarded as identical, and that it is necessary to analyze the venous blood of each organ in particular; but what, I believe, has never yet been stated, and which, nevertheless, seems to me indispensably necessary to be henceforth considered, if we desire that chemical analyses should prove as useful as possible to physiology, is the separate and comparative examination of the composition of the venous blood of the same organ when in repose and in activity. From what has been stated above, we may predict that there will be often found greater differences between the two bloods of the same organ in the state of activity and of repose than between the corresponding bloods of two different organs. This point of view is not solely applicable to glands, but should be extended to all the organs of the body, the venous blood of which will now have to be studied under these two conditions. We may in some measure characterize each tissue by the very different modifications its functional activity impresses on the blood that traverses it. Thus, if the blood quits glands when active reddened, it leaves a muscle that contracts with a very black colour and different physical characters. The mechanism of these different colorations of the blood will necessarily receive its explanation through ulterior chemical analyses, of which we are only at present desirous of indicating the physiological conditions. We will conclude with the remark, that all these modifications which supervene in the blood as a consequence of the functional activity of organs are always determined by the nervous system. It is consequently at this point of contact between the organic tissues and the blood that we must acquire our ideas of the special part played by the nervous system in the physico-chemical phenomena of life. The development of the facts which relate to this point of general physiology will form the subject of an early communication."—*Med. Times and Gaz.*, Feb. 27, 1858, from *Comptes Rendus*, tom. xlvi. pp. 159—165.

5. *On the Properties and Uses of the Red Blood and of the Dark Blood.*—Dr. **Brown-Sequard** communicates several observations which strengthen him in the view that blood charged with oxygen, whether arterial or venous, has the power of re-establishing the vital properties of the contractile and nervous tissues, when applied within a certain space of time, after they have lost these properties. After having repeated Sir Astley Cooper's experiments, that animals die from asphyxia, when circulation is stopped in their four encephalic arteries, and that they recover almost immediately if the circulation is quickly re-established—Brown-Séquard ascertained that if the circulation takes place again a few minutes after the last respiratory movements had ceased, life does not re-appear. But the red blood then still possesses the power of re-establishing life, as insufflation of the lungs causes energetic movements of the limbs, while the head remains at rest as long as the pressure on the arteries continues; but as soon as the latter is removed, the encephalon resumes its functions, and the animal may be restored to full life, even fifteen minutes after the commencement of the compression. The same author found also that in heads separated from the trunk, injections of red blood—*i. e.*, blood charged with oxygen—may reproduce the actions of the encephalon (respiratory movements of the face, movements of the eyes, &c.). Further experiments have shown, 1. That the presence of fibrin in the blood is not necessary for this effect; 2. That serum alone does not possess this power; 3. That the blood richest in oxygen and globules does possess it in the highest degree—the globules acting probably only as bearers of oxygen. Another series of experiments regarding the properties of red and black blood, leads Brown-Séquard to the inference, that the red blood increases the vital properties by nourishing the tissues, but that it is incapable of making these properties appear by stimulating them; that the black blood is an energetic stimulant of the nervous centres, and also, but in a less degree, of the nerves and contractile tissues, but that it does not possess—or at least only in a small degree—the power of maintaining or regenerating the vital properties.—*B. and F. Med.-Chirurg. Rev.*, Jan. 1858, from *Compt. Rendus*, Oct. 19, 1857.

6. *Membrana Meconii, and Rete Vasculare, newly-discovered Structures existing in the Fœtus.*—Dr. B. Ridge asserts that in many instances he has proved the meconium of newly-born infants to be inclosed in a special covering, which he names the *meconic membrane*, and which is secreted by the *rete vasculare*—this being, as its name implies, a vascular network lying between the foregoing and the true mucous membrane of the intestines. The use of the meconium during fœtal life, he considers, is to keep the intestinal tube patent from end to end as a "proper stuffing;" and that of the meconic membrane, to prevent, by its interposition, the contact and consequent absorption of excrementitious matter by the lacteals and absorbent vessels of the alimentary canal. At the time when the new being is called into self-existence, the meconic membrane and rete vasculare, which have served their turn, begin to become detached from the infant; as, by the same rule, the placenta, which has answered as temporary lungs, is separated from the organisms of both parent and offspring. On some occasions, Dr. Ridge states that he has found the meconic membrane to come away with the conium itself at the time of birth; but this is by no means an uniform occurrence, as at other times, when retained together with the rete vasculare, both are subjected to chylification by the action of the bile: and the author attributes, in some degree, the healthy condition, or otherwise, of infants for a certain period after birth, to the amount of rapidity with which this process takes place.—*Lancet*, Nov. 28, 1857.

## ORGANIC CHEMISTRY.

7. *On the Physiological Relations of Albumen.* By Dr. Hayden, Prof. of Anat. and Phys. (Read before the British Association.)—The inquiry of which this paper contains the first part, was undertaken with the view of determining the relations which subsist between the albumen and other organic constituents of the blood. It was suggested by the apparently anomalous fact, that in various conditions of the animal body—sometimes of confirmed disease, occasionally of temporary derangement—one of the staminal principles of the blood is eliminated in large quantity by the excreting organs; and regarding these, as I conceive we must, not only as depurants of the system, but likewise as adjuvants of nutrition to the extent of removing from the body superfluous alimentary matter, from whatever cause present, we are warranted in concluding that the state of the economy in which this occurs is one of repletion, or over-supply as regards the principle eliminated and the actual requirements of the body for that particular principle. It is well known that the "elements of respiration" may be stored up in the body by a process of deposition in the form of fat, to meet the urgent demand involving a large expenditure of these elements, to which variations of external temperature and other circumstances occasionally expose the animal. Not so, however, the plastic elements of nutrition: these are appropriated only as required for immediate use in the renovation of the tissues, and if from any cause one happens to be in excess in the blood, whether absolutely, as the immediate result of ingestion, or relatively by loss of some of the allied constituents, then a process which may be conveniently designated *elemental adjustment*, is set up, by which the principle in excess continues to be discharged from the system, till it attain the normal proportion relatively to the other staminal elements.

Many facts may be adduced in proof of this self-adjusting property in the blood. Kaupp asserts that the quantity of chloride of sodium excreted by the kidneys is usually in proportion to that ingested; but when, after prolonged abstinence from this salt, a large quantity of it is taken, then the quantity excreted in the urine is less than that ingested. Andral says that the first effect of hemorrhage on the constitution of the blood is manifested in a decrease of the corpuscles only, but if it be prolonged or repeated, the albumen and fibrin are found to have undergone a corresponding diminution, whilst, according to

Becquerel and Rodier, the equilibrium is not restored through the blood drawn, in which the corpuscles and albumen observe a regular and equal ratio of decrease with each subsequent bleeding. Andral further states that some females suffer during pregnancy a loss of corpuscles to the amount of twenty-seven parts in a thousand of the blood, and become anæmic; we know that it is in such cases more especially albumen is found in the urine of pregnancy. An absolute or relative decrease of the fibrin, as in scurvy and plethora, will give rise to hemorrhage, by which, in the words of Andral, "the equilibrium is spontaneously established between the fibrin and globules." Becquerel and Rodier analyzed the blood in fifteen cases of Bright's disease, and found a mean of 117.28 parts of corpuscles and 60.58 of albumen in a thousand; the decrease of albumen was greater in proportion to the length of time that had elapsed from the commencement of the disease. This has an obvious relation to the progressive diminution in the quantity of blood corpuscles, as evinced by the increasing pallor of the patient. In thirteen cases of chronic Bright's disease, in which the blood was analyzed by the same pathologists, it yielded a mean of 108.8 parts of globules and 55.93 of albumen per thousand, whilst the fibrin increased to a mean of 4.37. The blood occasionally found in the urine in these advanced cases exhibits a marked alteration in the physical character of its corpuscles, which are serrated or broken up into a *detritus*.

In order to determine the value to be attached to the views here enunciated, I performed some experiments, the result of which I beg to offer to the Association. The experimental portion of the inquiry had a threefold object: 1st. To determine the effect produced on the composition of the urine by inducing a relative or absolute increase of albumen in the blood. 2d. The action of urea on the blood-corpuscles as exhibited by the microscope; and 3d. The proportion of albumen contained in the serous effusion of renal and cardiac dropsy respectively.

The first-mentioned object I thought would be best accomplished by abstracting blood from living animals, the quantity to be such as to make a decided impression on the system, and determined by the absolute weight of the animal's body. It is obvious that the effect of a first bleeding of this kind on the constitution of the blood remaining in the body would be a decrease in the proportion of corpuscles, and a relative increase of the albumen. An absolute increase of albumen might be induced by bleeding an animal to a small amount, and then injecting into the vein an equal quantity of a solution of albumen, having the temperature and specific gravity of the serum of the blood. The contrivance adopted for collecting the urine was a wire-crib, placed on a concave zinc table, having an aperture conducting into a receiver fixed beneath; in this the animal was imprisoned till a sufficient quantity of urine was obtained for analysis, when it was liberated in order to take exercise till the next experiment. A rabbit, weighing 3½ lbs. was fed on cabbage, milk, and water; the urine passed next day was feebly alkaline, specific gravity 1.020, and free of albumen. The animal was then bled to six drachms, and fed on fresh grass and warm milk. The urine examined the following day presented the same reaction and specific gravity as at first, but became distinctly opalescent on the application of heat and nitric acid. A dog of 18 lbs. weight was fed on milk and oatmeal stirabout; urine neutral; specific gravity 1.020; contained no albumen. The animal was bled to eight ounces, on the 18th August; on 19th the urine collected during the previous night was examined and found neutral, specific gravity 1.030, contained traces of albumen. Examined again on 20th, the urine was found alkaline—its specific gravity had fallen to 1.020, but still a trace of albumen. August 21st, specific gravity 1.022; albumen as on yesterday. The quantity of blood taken in these two experiments was determined by the estimate of Welker, according to which the total quantity in the body of an animal is equal to one-thirteenth of its weight.

With reference to the detection of albumen in fluids containing only a minute trace of this principle, the aid afforded by the microscope deserves to be noticed: if a drop of the suspected liquid, the opalescence of which is barely discernible under the ordinary tests, be placed on a slip of glass under the microscope, and a drop of nitric acid added, a cloud of minute vesicles will be observed to pass slowly over the field of view, and if the line of advance of this cloud be accurately marked, the suddenness with which the constituent vesicles start into view from an apparently structureless fluid, cannot fail to strike the observer. These minute bodies present a highly refractive margin with a light centre, and an average diameter of 1-10000th part of an inch.

A young dog, weighing 12 lbs. 7 oz. was next subjected to experiment; the urine collected before operating was free of albumen and alkaline; specific gravity 1.005; blood was now drawn from the jugular vein to the amount of 5 oz., and into the aperture in the vessel was injected half an ounce of fresh dilute ov-albumen having the temperature and density of blood serum; bread and warm milk were given as food and ravenously eaten. The following day it was found that no urine had been passed in the interim. August 27th, 4 oz. of urine were collected, neutral in reaction; of specific gravity 1.030, and highly albuminous, being almost gelatinized by heat and nitric acid. The albumen was coagulated and collected by filtration, next dried, pulverized, and deprived of impurities, by ether and boiling water, subsequently dried and incinerated; the total quantity of pure albumen thus obtained was nine grains. In order to determine what proportion of this was due to the ov-albumen injected, and what, if any, to the ser-albumen discharged in consequence of the loss of blood sustained by the animal, I endeavoured to ascertain the amount of pure dried albumen yielded by half an ounce of the white of egg, and found it to be 72½ grains. I had expected, and probably would have found, had the operative part of the experiment been in all respects successful, a balance in favour of the albumen excreted with the urine, as compared with the quantity contained in half an ounce of the white of egg; but unfortunately at the moment when the last portion of albumen was injected, and before a ligature could be applied to the open vessel, the dog struggled violently and caused a fresh loss of blood, with probably a more than proportionate loss of the albumen injected, as the bleeding occurred chiefly by regurgitation from the heart. Five ounces of urine were obtained from this dog on the 28th August; specific gravity 1.010; feebly acid, but no trace of albumen.

With reference to the next subject of inquiry indicated at the outset, namely, the visible effect of a strong solution of urea on the blood corpuscles, the result of my experiments was not as decisive as I had expected, yet it was sufficient to show that when exposed for a few hours to the influence of this agent in a concentrated form, the corpuscles undergo a considerable modification. They are much diminished in number, and those which have not disappeared are become tumid and spherical; the action, however, is by no means energetic.

The proportion of albumen contained in the different dropsical effusions next engaged my attention. I had reasoned thus, *a priori.* If albuminuria be the result of an effort of the blood to restore the equilibrium between its corpuscles and albumen, by ridding itself of a portion of the latter; if anasarca be a concomitant symptom of the same disease, and produced by the same cause, then we may not unreasonably expect to find an excess of albumen in the serum effused. In order to determine this point, it became necessary to institute a comparison between the fluids of cardiac and renal dropsy. I have been so fortunate as to obtain a sufficient quantity for examination from two patients affected with chronic Bright's disease, but failed in the short time allowed me to procure any from a case of cardiac dropsy.

This is the less to be regretted, since Andral's data are amply sufficient for our own purpose with reference to the latter disease, although as regards the former he has not supplied us with any information bearing on the point now under discussion, Andral analyzed the serous effusion in sixteen cases of cardiac dropsy, and found a proportion of albumen ranging between four and forty-eight parts in a thousand. The facts elicited by myself from the two analyses I have made, do not, I am bound to say, support the hypothesis with which I started, namely, that the percentage of albumen would be found higher in the fluid of renal than in that of cardiac dropsy. In the first case examined, the proportion was twelve, and in the second twenty-four parts in a thousand.

It will be observed that the higher of these two numbers stands midway between the minimum and maximum of Andral.

I now venture to submit, in the form of propositions, the inferences which I think may be drawn with at least the force of probability from the preceding data. The inherent property of *quantitative adjustment* in the blood, probably has reference mainly to nutrition, which would appear to require as an essential condition for its healthy exercise, certain fixed mutual proportions between the constituent elements of the blood, but in part also to the maintenance of the normal relative density between its serum and corpuscles. The appearance of albumen in the urine is either transitory or persistent; when transitory it is produced either by an error of excess in the use of protein substances of which the blood seeks to relieve itself through the kidneys, or by a state of congestion of these organs in which the blood serum transudes through the walls of the renal capillaries and is discharged with the urine. When persistent it is probably always the result of loss or solution of the blood corpuscles, and produced by an inherent self-regulating property in the blood, by which the normal proportion between its constituent elements is sought to be re-established. In acute renal dropsy, the *point de depart* in the blood changes would appear to be loss of albumen; but in the chronic form of the disease, attended with uræmia, the starting point probably is solution of the corpuscles. The loss of albumen experienced by the blood in Bright's disease, would appear to be inversely proportioned to the degree in which it appears in the urine, and it may be in the dropsical effusion likewise. The quantity of fibrin in the blood is regulated in great part by that of the corpuscles, not by adjustment, but in virtue of the causal relation subsisting between the disintegration of the one and the formation of the other. Diminution, therefore, of the quantity of globules in the blood will not necessarily cause elimination of the fibrin, because it involves diminished production of the latter; but the converse of the proposition will not hold, as diminished proportion of fibrin, by whatever cause produced, may give rise to elimination of the blood corpuscles in the form of hemorrhage.—*Dublin Hosp. Gaz.*, Oct. 15, 1857.

8. *On the Chemical Changes in the Air during Respiration.*—Dr. Harley has published (*Virchow's Archiv.*), some experiments which he made under the supervision of Bunsen, at Heidelberg, on the interchanges between the blood and its various constituents and atmospheric air. He found that blood which has been repeatedly shaken with successive portions of air, till it had *apparently* given up all its carbonic acid, and become saturated with oxygen, when left for twenty-four hours in an hermetically sealed vessel, with an equal volume of air, and frequently shaken, underwent a further change of the same character. In one case, the air lost 10.54 per cent. of oxygen, and gained 5.05 of carbonic acid. In another, the loss of oxygen was 9.63 per cent., and the gain of carbonic acid 5.96. In both experiments, the ratio of the oxygen lost to the carbonic acid gained is greater than is accounted for by the usual law of interchange during respiration, which inclines the author to the belief that part of the oxygen is used for the formation of water. He confirms Scherer's observation that fibrin has the power of absorbing oxygen, and giving off carbonic acid; and shows that albumen possesses the same property, but in a minor degree. The interchange of gases was, of course, always much greater when the coagulum was employed, than with serum only, a result which agrees with some of Brown-Séquard's observations, presently to be noticed, on the relative capabilities of blood and serum for absorbing oxygen. The power of hæmatin to absorb oxygen and give out carbonic acid is very great, a power which Dr. Harvey thinks is common to all colouring materials, both in the animal and vegetable world.—*Hornidge's Report on Anat. and Physiol.*, in *Midland Quarterly Journ. Med. Sci.*, Jan. 1858.

## MATERIA MEDICA AND PHARMACY.

9. *Influence of Liquor Potassæ and other Alkalies on the Therapeutic Properties of Henbane, Belladonna, and Stramonium.*—Dr. A. B. Garrod read an interesting and important paper on this subject before the Royal Medical and Chirurgical Society (Nov. 24, 1857). He first alluded to the frequent exhibition of henbane with liquor potassæ, and brought forward many proofs that such combinations were often administered. He also stated that the like mixtures were recommended by both medical and surgical authors. Dr. Garrod then proceeded to detail experiments, which demonstrated beyond doubt that the active principle of henbane was destroyed by liquor potassæ and other caustic alkalies; and that such a combination was inert, both when topically applied (as evidenced by the absence of power in causing dilatation of the pupil of the eye), and also when internally administered. Similar observations were next detailed upon the preparations of stramonium and belladonna, and the results were found to be the same. It was, however, shown that the carbonates and bicarbonates of the alkalies were devoid of the property of destroying the activity of the plants. In some of Dr. Garrod's experiments as much as a drachm of the extract of henbane and an ounce and a half of the tincture were administered in combination with potash without the production of the slightest symptom.

The results arrived at in the communication may be thus summed up:—

1st. Caustic alkalies, such as exist in liquor potassæ or liquor sodæ, entirely destroy the activity of henbane, preventing its action on the pupil when topically applied, and its influence upon the system when internally administered; and, combined with a proper amount of these alkalies, the largest doses of the preparations of henbane may be given without the production of any symptoms.

2d. The same influence is exerted by the fixed caustic alkalies upon belladonna and stramonium.

3d. The carbonates and bicarbonates of potash and soda produce no injurious effects upon the preparations of any of the three above named plants.

The deductions naturally to be drawn from these results are:—

*a.* That neither liquor potassæ nor any caustic fixed alkali should be prescribed with tincture or extract of henbane, as the virtues of the latter drug are thereby completely neutralized.

*b.* That when it is desirable to administer an alkaline remedy with henbane, either a carbonate or bicarbonate should be selected, which would probably be equally efficacious upon the stomach, if such influence be required, and certainly as efficient in altering the condition of the urine, and the mucous membrane of the urinary passages.

*c.* That the same precautions should be observed with regard to belladonna and stramonium, if at any time prescribed in conjunction with alkalies.

To a question whether the caustic alkalies were an antidote to the poisons under discussion, Dr. Garrod stated that he did not think caustic alkali could be introduced as an antidote, because it would require alkali of such a powerful character, or in such large quantities, that it would be injurious to the coats of the stomach. He had no doubt that the destructive action of the alkali commenced at the moment it was mixed, but in order to effect complete neutralization a larger quantity would be required than it would be safe to administer. He could, however, communicate to the society an antidote for henbane, belladonna, or stramonium, which was perfectly efficacious. It had been used on his own person a year and a half ago. It was animal charcoal. If we took a solution of any of these poisons, and added but a small amount of animal charcoal, the effect on the system was entirely destroyed. It required only a few grains of animal charcoal to destroy completely, or rather neutralize and render of no avail, belladonna. The same applied in a greater degree to stramonium and henbane, which were weaker than belladonna. About a year and a half ago, he took by accident twelve grains of the dried leaf of the belladonna, and a gentleman, a patient of his, took about a quarter of an ounce of dried belladonna. To both of them animal charcoal was administered, although almost too late. Both of them recovered; the gentleman who took the quarter of an ounce, completely. He was perfectly certain that if animal charcoal could be administered when these vegetable poisons had been taken, it would prove completely efficacious. Of course, it was necessary that the antidote should be administered before the poison was absorbed into the system. If it had passed out of the stomach into the system, of course no antidote would have any effect. He could detail an experiment which he had tried more than once. He had given a dog a dose of aconite, and he had given to a second dog thirty or forty times that dose, combined, however, with a small amount of animal charcoal. The first dog died, but the dog to which the animal charcoal was administered experienced no ill effects. He was perfectly convinced that animal charcoal was the most powerful antidote, better than any of the alkalies, because, in the first place, the alkalies required time, and, in the second place, they had to be given in large quantities, and, of course, would be liable to injure the mucous membrane of the stomach and the intestines. It was not necessary to have purified animal charcoal; common bone black would be sufficient.—*Med. Times and Gaz.*, Dec. 5, 1857.

In a very recent journal (*Lancet*, Feb. 27th, 1858), Mr. John F. France relates some experiments, the results of which are entirely at variance with those of Dr. Garrod.

Mr. France mixed liquor potassæ with belladonna, and also with hyoscyamus, in various proportions, and found their combination, when applied to the eye, always produced dilatation of the pupil. If the peculiar influence of belladonna and hyoscyamus on the iris, be adopted as the criterion of their therapeutical activity, that activity—Mr. France says—remains unimpaired by their admixture with liquor potassæ.

The subject is well worthy of further investigation.

10. *Experiment on Colchicine, and the Comparative Action of the Dry Bulbs and the Seeds of Colchicum.* By Professor Schroff, of Vienna.—The colchicine employed was a light powder of crystalline appearance, of a clear yellow colour, of a very bitter taste, afterwards grating to the throat. It was not altogether pure, for then the substance is colourless and crystallizes in needles. It is soluble in water, alcohol, and ether; the watery solution has a feeble alkaline reaction. In order to study the taste of this substance, M. Heinrich took $\frac{1}{100}$th of a grain of colchicine, and soon after he experienced eructations and great nausea, with augmentation of the saliva. The nausea lasted some hours, even after supper, which was taken without appetite. The pulse fell gradually eleven pulsations in the first two hours. Eight hours afterwards the same observer took $\frac{2}{100}$ths, enveloped in a wafer; it was then half past four o'clock in the afternoon. The pulse was not changed in the first two hours. Until eight o'clock in the evening, nothing was evinced except eructations and slight ptyalism; supper was taken without appetite. After ten o'clock there was broken sleep, from which M. Heinrich was awoke at half-past one by painful dreams; he had desire to go to stool, but he had scarcely left his bed when the nausea increased, bringing on a fit of vomiting for two minutes; at the same time there was a very soft and copious stool, accompanied with violent griping. This painful scene was renewed three times at short intervals. The first matters vomited consisted of the undigested dinner and supper, then there was a greenish-yellow and bitter liquid. About three o'clock he again went to bed, and slept till six o'clock, when fresh and abundant vomiting and painful alvine evacuations of a mucilaginous greenish-yellow liquid supervened. The vomiting ceased from that time, but eructations, nausea, and total absence of appetite lasted for four days. Thus, the first day after the experiment, M. Heinrich took nothing but cold water, and the three other days, only a little soup. The abdomen was tympanitic, sensitive, and gurgling. The second day there were two stools, on the third, one, and on the fourth, three, accompanied with griping, and containing, particularly on the second and third day, numerous flocculi, similar to coagulated white of egg.

The weakness, already considerable on the first day in consequence of the abundant evacuations, increased at the time of the appearance of febrile phenomena; M. Heinrich was obliged to keep his bed the first day, and could not leave it without difficulty on the three following days. The fever commenced towards the middle of the first day, with shivering, followed by great heat, lasting for several hours, with thirst, very much accelerated pulse, cerebral distress, agitation, and want of sleep. The sensibility of the abdomen disappeared only on the fourth day. The quantity of urine could not be determined, in consequence of the frequency of the stools; this liquid was thick, and had an abundant white deposit.

Colchicine acts like acrid substances in general, and only after being absorbed. The stomach and intestinal canal are the parts on which it especially acts; the brain and the spinal cord remain altogether unaffected, or rather experience only secondarily some vague functional disturbances which are not constant. Death results probably from paralysis of the heart. The blood does not coagulate; it thickens, becomes black and pitchy, such as is found in the most violent cases of cholera; it accumulates in great quantity in the right cavities of the heart, very little in the left auricle. It is not possible to know if the colchicine passes into the blood and urine unchanged, or whether it undergoes modifications.—*B. and F. Med.-Chirurg. Rev.*, Jan. 1858, from *L'Union Med.*, June 9, 1857.

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11. *Emmenagogue Action of Achillea Millefolium.*—Dr. Ronzier-Joly feels convinced that the *Achillea millefolium* has a decided power in promoting the uterine functions, and records two cases in support of this opinion. In the first case, the patient, who was nineteen years of age, was attacked with a slight sore throat, and in the course of the complaint the menses appeared, but so scantily that only a few drops of blood were passed, and the period ceased the same day. As the sore throat became worse in spite of treatment, it was thought that the appearance of the menses might be attended with a radical cure, and the millefolium was administered. The menses returned in abundance, and lasted two days. In the other case, a woman was delivered of an infant, and was going on well for two days, but on the third she was seized with fever and delirium, and the lochia were suppressed. Sulphate of quinine was administered in the intervals of the fever, and as the lochia did not reappear, in spite of revulsions to the lower limbs, the millefolium was administered as well as the quinine. The lochia reappeared the next morning, and nothing unfavourable afterwards occurred.—*B. and F. Med.-Chirurg. Rev.*, Jan., 1858, from *Bull. Gén.*, June 30, 1857.

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12. *Defects of Ordinary Escharotics with Suggestions for their Improvement.*—Mr. Ellis read before the Western Med. and Surg. Soc. of London, Dec. 4, 1817, some notes on this subject. After giving a definition and general history of escharotics, the author made some observations upon the mode in which they affected the tissues, either by destroying their continuity, organization, and life, by combining with them, or by a mutual decomposition forming new compounds. He then remarked upon the various chemical effects of acids, alkalies, and metallic salts; the first acting as oxidizing agents, the alkalies forming compounds with albumen and fibrine, and the metallic salts uniting with albumen to form metallic albuminates. Enumerating the acids in general use as escharotics, nitric, hydrochloric, and sulphuric, he gave the preference to nitric acid, but stated that he had found a difficulty in procuring it of sufficient strength, and of a sp. gr. of 1.50; he thought its utility much impaired by its fuming property and intense rapidity of action; also from the sore made by it being very superficial and its effects not being permanent. Hydrochloric acid he considered should have a sp. gr. of 1.21, but it was feebler than nitric acid. Sulphuric acid he stated was weaker than nitric, but stronger than hydrochloric acid; it had its advantages in not fuming; for obvious reasons it should be applied by means of asbestos. The author then gave his experience of the alkaline escharotics, hydrate of potassa, and potassa c. calce, the former of which, he said, although strong and quick in action, was defective from its deliques-

cence, its liability to spread, and its friability; the latter, although comparatively free from the above objection, was sometimes followed by hemorrhage. As Mr. Ellis was chiefly alluding to the use of the above escharotics to the os and cervix uteri, he had found in the friability of potassa c. calce a great defect, also that great contraction of the canal of the cervix followed its application. Of the metallic salts he observes that nitrate of silver was extremely valuable as a mild escharotic, and that its effects were quite superficial. As usually sold he had found it much adulterated, which greatly depreciated its value; he recommended the crystallized salt to be used instead, and melted into sticks when required.

Another defect he had found in its brittleness, which rendered it dangerous when applied to a part like the inner surface of the cervix uteri. To obviate this evil he has been in the habit of melting the caustic in a small bullet-mould having a core; this gives him a small globe, with a hole running through it, which, by means of a pin, is easily fixed to the holder.

Chloride of zinc he showed to be an extremely powerful and valuable agent; that it acted quickly and deeply. He uses it mixed with flour, and made into a paste with water.

Deliquescence and giving great pain were its principal defects.

Having made a few observations upon the actual cautery, he concluded by exhibiting the implements he used in applying the various escharotics he had just mentioned, and the mechanical contrivances for melting the nitrate of silver, and attaching it to the holder.—*Med. Times and Gaz.*, Jan. 9, 1858.

13. *Sulphuric Acid and Sulphate of Zinc as a Caustic Agent.*—There is an important chemical principle involved in the application of sulphuric acid for the destruction of living tissues, which is that the acid mainly acts upon organized matters, by its powerful tendency to combine with the elements of water contained in them, so that the carbon is left free, forming the black charcoal-like mass with which we are familiar as the result of its action upon all such tissues. Now, the more concentrated is the acid, in its liquid form, the greater is its power to decompose animal or vegetable tissues by abstracting the elements of water. It is desirable, therefore, in adding material to the acid for the purpose of giving it the form of paste, that the substance employed should not be an organized matter capable of furnishing water to the acid, and so weakening its caustic power, but a substance which should add fresh caustic power, so as to produce a combination possessing the greatest possible degree of caustic force. The dried sulphate of zinc suggested itself to Mr. HENRY THOMPSON as such a material; and upon trial it has fully answered his expectations. He prepares it as follows:—

"The ordinary sulphate of zinc is to be dried in an oven or sand-bath, so that the water of crystallization is driven off, and a whitish powder remains. Enough of this is to be added to some strong sulphuric acid, in order to make a semi-fluid mass of consistence sufficient to prevent its running beyond the spot on which it is placed. The mixture should be kept in a stoppered bottle, and be applied with a small glass spatula or rod. Before using it, the surrounding parts should be protected by a thick layer of cerate or firm ointment, so as to form an embankment limiting the surface to be destroyed, and a layer of the caustic may be made upon this of about the eighth or tenth of an inch in thickness. This is allowed to remain. As in the case of other caustics, I believe, the pain is less in the superficial than in the deeper diseased tissues."

One advantage of this combination consists in the ease with which it is prepared, and the facility with which its constituents may be obtained.—*Lancet*, Jan. 9, 1858.

14. *Administration of Cod-liver Oil, and Substances soluble in it, in Capsules.*—Many patients object to taking cod-liver oil in consequence of its unpleasant flavour. It occurred to Mr. T. SPENCER WELLS that this objection might be obviated by inclosing the oil in membrane capsules. This has been done by Messrs. Evans and Lescher, and Mr. Wells is now in the habit of prescribing these capsules containing cod-liver oil only, or holding in solution quinia, the

iodide of iron, and the biniodide of mercury. "Each capsule," Mr. Wells states, "contains twenty minims of the oil, and the dose of the quinia, or iodide, may be varied. Patients who object very much to the oil think nothing of taking three, or even half a dozen, capsules three times a day.

"The combination of biniodide of mercury with cod-liver oil is particularly useful in some of the chronic syphilitic superficial diseases of the skin and mucous membranes. A tenth or twelfth of a grain with a drachm of the oil in three capsules, three times a day, I have found to answer admirably in cases of chronic pityriasis and psoriasis, with superficial ulceration of the fauces. In some of the chronic joint affections of scrofulous subjects, the iodide of iron, given in the same way, but in larger doses, is also very efficacious. When it is desired to give iron in the oil without iodine, and to give larger quantities, the wafer paper, so much used for taking the cubeb and copaiba paste, answers extremely well. A paste may be made of the sesquioxide of iron—the so-called carbonate—by mixing up with it a sufficient quantity of the oil. A teaspoonful of this paste, enveloped in wetted wafer paper, is swallowed without the least difficulty or unpleasantness by any one who can take a pill.

"In many cases of secondary syphilis in persons of broken down constitution, it is desirable to combine the iodides of mercury and iron. In this combination, the iodide of mercury becomes soluble, and it may be given either in the oil in capsules or in the form of a very elegant syrup, which Mr. Bastick prepares. In prescribing this, however, the ordinary dose of the iodide of mercury must be considerably lowered, as the action becomes much more powerful when the salt is made soluble. The syrup is prepared of various strengths; but in the proportion of a quarter of a grain of the iodide of mercury to two grains of the iodide of iron in a drachm of the syrup, it will be found extremely useful, and not very disagreeable."—*Med. Times and Gaz.*, Dec. 5, 1857.

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15. *Preparation of Iodide of Calomel.*—The chemical compound called iodide of calomel, discovered in 1847, by M. Boutigny, was prepared by mixing protochloride of mercury and iodine in the relation of one equivalent of iodine and two equivalents of the protochloride, and it consists of a mixture of calomel with biniodide and bichloride of mercury. It is consequently less active than the two latter salts, but more active than the protiodide and the protochloride, and is very much celebrated in the treatment of certain affections of the skin, particularly in acne rosacea. M. Gobley endeavours to render the process of M. Boutigny more practical and more easy of application. He takes iodine reduced to powder in a mortar, and mixes it with calomel, and then introduces the mixture into a small glass retort. This is then placed upon a sand-bath, and some moments afterwards the mass is seen to assume at first a greenish tint, and then enter into fusion. The retort is withdrawn, and the mass soon solidifies; it is at first greenish, then in the air it becomes gradually red, and at last it remains so. The iodide of calomel is employed in pills and as a pommade; the former are prepared by mixing it together with gum arabic, crumb of bread, and orange-flower water; the latter is made by mixing it in powder with lard.

M. Bouchardat has lately announced that there are two iodides of calomel—one which may be called a protiodide, and the other a biniodide; and M. Perrens has proposed to prepare the two iodides, differing from one another not only in their physico-chemical character, but also very probably in their therapeutical action. They are prepared in the same manner, except that one compound is formed with half the quantity of calomel which is employed for the other.—*B. and F. Med.-Chirurg. Rev.*, Jan., 1858, from *Bull. Gén. de Thérap.*, Sept. 15, 1857.

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16. *Lotion for Strumous Glands.*—The following application neither stains the neck, nor annoys by its smell, while it acts with greater energy than the ordinary iodine ointments: Dissolve ʒj of iod. pot. in aq. dest. and eau de Cologne, āā ʒj, and spt. vini r. ʒvj. It is to be employed in frictions morning and evening.—*Med. Times and Gaz.*, Jan. 16, from *Omodei's Annali Univ.*, vol. clxii.

17. *Cocoa-nut Oil Ointments.*—The cocoa-nut oil is a more eligible body for the formation of ointments than lard, keeping much better, not staining the linen, and admitting of more complete absorption. To render the oil of commerce fit for pharmaceutical employment, it is in general sufficient to liquefy it at a moderate temperature, and strain it through linen. But if it retains its peculiar odour too strongly, and is of too yellow a colour, it may be purified by digesting it for some hours in a water-bath, with some coarsely powdered vegetable charcoal, and filtering it while warm through paper. The following are some of the formulæ that have been tried with success: ℞.—Iod. pot. ʒj; ol. cocos ℥j. ℞.—Ext. bellad. ℈j; ol. coc. ʒiij. ℞.—Veratrini gr. iij; ol. coc. ʒiij. ℞.—Sulph. quin. ℈j; ol. coc. ℥j; ol. rosar. gtt. x (very useful in pityriasis capitis). ℞.—Chlorof., ol. coc., āā ℥j (of great service in neuralgic and rheumatic pains, rendering the chloroform more fixed, and its action more durable). ℞.--Ol. terebinth., ol. coc., āā ℥j. ℞.—Hydr. ox. rub. gr. iv.; ol. coc. ʒij.—*Ibid.*

18. *Proposed Substitute for Oils and Fats in Ointments.*—The application of cerates and ointments to diseased and tender surfaces is attended with certain inconveniences, among which may be mentioned their insolubility in water, and consequently the difficulty of removing them; their liability to become rancid, and the insolubility of most of the remedies in fat.

Mr. Startin, some ten or twelve years ago, introduced a combination of glycerine with amylaceous substances, as a basis of ointments.

Very recently (Jan. 6, 1858), G. F. Schacht, in a communication to the Pharmaceutical Society (London), proposed as a substitute for these ointments, a mixture of glycerine and starch. The proportions which have given him the most favourable results are glycerine, f℥j; starch powder, 70 grs. The entire process consists in mixing the ingredients cold, and heating the mixture gradually to about 240° Fahr., constantly stirring.

This constitutes a basis, with which may be produced preparations corresponding to most of the cerates and ointments of the Pharmacopœia.

Mr. Schacht has adopted for this preparation the name of *plasma;* a better name is *glyceramyl,* or, which has been proposed, *glysamyl* (from glycerine and amyline).

We have employed this preparation in a few instances, and thus far with very satisfactory results.

## MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

19. *Treatment of Diabetes by Sugar.*—Two years ago Andral reported a case of saccharine diabetes, in which the general condition of the patient did not improve, and the quantity of sugar increased during total exclusion from the diet of all saccharine elements. The addition of these elements to her food was followed by a diminution in the amount of sugar excreted. This alteration, however, was temporary only; and at the end of three weeks from the adoption of this plan, the urine contained 54 grammes to the pint, its acme before having been only 49. Andral further states that this is not a solitary case. Piorry more lately has noticed the inefficacy of an unmixed diet, and has recommended that the patient should be supplied with sugar candy in large quantity.

Dr. Budd has tried the plan in the case of a diabetic man, who, "within a few days after his admission, was put on a diet consisting entirely of meat, eggs, carefully prepared diabetic bread, a small quantity of butter, and a few ounces of wine. Under this regimen, contrary to what usually happens, the diabetic symptoms began to grow worse almost from the first." During the first week after his admission, the quantity of urine varied from 9 to 12½ pints its specific gravity from 1039—42. "The quantity of urine rose in the course of a week from 9 to 17 pints, its specific gravity remaining much the same. The patient's thirst increased, and he became daily thinner and weaker. At the end of that time, an attack of diarrhœa occurred, which lasted, with more or less severity, very nearly ten days. During that interval he took very little food, and the precise amount of urine passed could not be estimated. When the bowels had become settled, he was found to be voiding from 7 to 10 pints of urine per diem, of specific gravity ranging from 1036 to 1044. On March 31st (twelve days after admission), the stomach rebelled so much against the diabetic bread, that six ounces of common bread were allowed in place of it; and these six were soon after raised to sixteen. His health now began to improve somewhat, and he gained a little in flesh and strength. The diabetic symptoms proper remained much as before.

"This improvement, however, was not of long continuance. In the beginning of May, he had become so weak as to be obliged to keep his bed. His tongue was very dry and brown, his pulse had become frequent, and he was much harassed by cough and pain in the chest." He seemed to be sinking. On the 22d of May, Dr. Budd reversed his "plan of treatment, and ordered the patient to be put on a varied and generous diet, with the addition of eight ounces of sugar candy, and four ounces of treacle daily. This change had very little effect at first, either on the quantity of urine passed, or on its specific gravity. It is worthy of remark, however, that what little there was, was in both respects on the side of diminution. The effect on the general health was marked and immediate. * * * As he became stronger, the diabetic symptoms also gradually lessened—to such a point, indeed, that on the 22d of July, exactly two months after the adoption of the new scheme, only three pints of urine, of specific gravity 1032, were passed in the twenty-four hours; and yet at this very time the patient was taking, in addition to much vegetable food, as much as *eight ounces of sugar and six of honey daily*—the honey having been substituted, at his own desire, for the treacle previously given. Since that time, the quantity of urine passed has somewhat risen, its present daily average being from four to five pints, of specific gravity varying from 1032—34. In other respects, his state is very satisfactory. He is ruddy, looks in very good condition, and declares himself to be strong and well. His tongue is moist; he no longer suffers from thirst: and his skin, from being dry and harsh in the extreme, has become soft and natural. He has increased in weight from 107 lbs., which was what he weighed shortly before beginning the sugar treatment to 126½ lbs." "That a diabetic man should not only recover his health by eating sugar, but that his diabetic symptoms should also very nearly vanish under the same treatment, is a fact that stands in startling antagonism to all present views, as well as to all prior experience on the subject."

Dr. Thomas Williams, Physician to the Swansea Infirmary, has made trial of this plan of treatment in two cases.

Before the experiment, Dr. W. states (*British Med. Journ.*, Dec. 19th, 1857) that both patients had rigorously adhered to a non-saccharine dietary; that in Case A, the urine had scarcely ever, for six months previously, varied from 1040 in specific gravity, and three pints in quantity, in the twenty-four hours; that in Case B the conditions were very nearly the same, although not quite so unfluctuating.

In twenty-four hours after the change of diet in Case A, the urine increased from three pints to four pints and a half, and from 1040 in specific gravity to 1042. In forty-eight hours, under the same diet, the quantity rose to five pints and some ounces, and the specific gravity to 1050. In another twenty-four hours, being the third day from the commencement of the experiment, the volume rose to six pints, and the specific gravity to 1056.

Case B exhibited almost precisely the same change. The urine increased in quantity and density, in the same time in an equally remarkable degree.

Neither of the patients could be prevailed upon to continue the experiments any longer. Both grew rapidly worse in every respect, and became greatly alarmed. The thirst grew more and more unquenchable. The skin became drier and drier; the bowels were every day more constipated; the mind passed from a calm state into a condition of rapidly increasing excitement, in one bordering almost on mania. The symptoms in every sense exchanged the passive for the active condition. Both patients regained their former tranquil feelings by the use of opium for three or four nights; and it was only slowly that the urine returned to its former physical properties. These two gentlemen emerged from this ordeal with the deeply-rooted convictions that the old system was the best; that practice is above and beyond theory; that the rule of contrarieties is preferable to that resting its airy claims on fancied similitudes.

Dr. GEORGE CORFE, on the contrary, in a more recent communication (*British Med. Journ.*, Feb. 6th, 1858, relates a case in which he considers the sugar to have been beneficial.

The subject of the case was a tradesman, 40 years of age, whose symptoms had been creeping on him for five or six weeks. When seen by Dr. Corfe, Nov. 14th, 1857, his urine was loaded with sugar, and sp. gr. 1049.

He was immediately put upon the following treatment: ℞.—Creasoti ♏iv; mist. acac. ʒss; aquæ carui ℥j. M. Fiat haustus ter in die sumendus.

In addition to the above, he was directed to take a tablespoonful of cod-liver oil in milk after each meal. The usual diabetic diet, consisting of underdone meat, greens, eggs, milk, and bran biscuits, was prescribed, with a total abstinence from saccharine, farinaceous, and amylaceous substances.

From this period to December 1st (two months) the patient became more or less dispirited at the manifest downward course the disease was assuming. The urine gradually increased in quantity, and the specific gravity ranged from 46 to 52, his vigour was fast waning, the disease assumed a most formidable character, and threatened to cut short his life in a few weeks. By the aid of polarized light, Professor Heisch ascertained that the urine at this period contained 100.28 grains of sugar in 1000 parts, or less than two ounces in each pint.

The weight of the patient at this stage was only 114 pounds, and as the symptoms were assuming every day a more dismal character, Dr. Corfe resolved on changing the whole line of treatment as follows. The patient was now directed to take zinci sulph. gr. ij; cinchoninæ sulph. gr. j; extracti lupuli gr. ij, in form of pill, with each meal, in lieu of the creasote mixture, and to continue the cod-liver oil. He was desired to use the following articles of diet: fat mutton and beef, and the same meats in form of soups; fresh white fish boiled; oysters, poultry, game, tripe, and any one of the following vegetables, daily, parsnips, turnips, carrots, spinach, greens, brocoli, endive, lettuce, celery, and to abstain from bread and all farinaceous food, and potatoes. His drink was directed to consist of a cup of coffee, with half an ounce of candy sugar, in the morning; a tablespoonful of rum in a glass of water, with the same quantity of sugar candy, and five grains of carbonate of ammonia, at luncheon, and two glasses of claret at dinner. In the evening, he was desired to take one ounce of honey on bread, in lieu of butter, and to sup on boiled milk, with an egg, etc.

After having continued this line of treatment from Dec. 17th to the 30th, the following results were obtained: the urine increased from four to eight pints in twenty-four hours, the specific gravity was 1050; it gave proof of containing, by polarized light, 112 grains in 1000 pints, or rather more than two ounces in each pint, and yet he had not lost in weight more than one pound. It should be here remarked, that he frankly acknowledged that he had not followed the directions of treatment in so strict a manner as he could have wished; for, although he felt stronger and more lively in mind, he had been to several festive parties, and had eaten freely of potatoes and bread on several occasions, and had drank beer, or bottled stout. But, after being reprimanded severely for his indiscretion, he faithfully adhered to the prescribed form of dietary. The pills were now increased one grain of each of the sulphates in strength, and on the 17th January, the urine had a specific gravity of 1038, containing 83 grains in 1000 of sugar, that is, a diminution of more than a quarter of an ounce in each pint of fluid, and for eight days prior to this report, the quantity never exceeded four pints in twenty-four hours.

The patient gained flesh and strength. The following shows his progress:—

| | Weight.<br>lbs. | Urine.<br>Pints. | Fluids taken.<br>Pints. |
|---|---|---|---|
| 1858. Jan. 15 | 120 | 5 | 5 |
| " 18 | 121 | 4½ | 4½ |
| " 21 | 124 | 3 | 3 |
| " 25 | 129½ | 2½ | 3 |
| " 28 | 132 | 3¾ | 3½ |

He can now attend to business comfortably; he can walk four miles an hour well. Perspired freely last night in bed, and exertion to-day induces a moisture also.

The urine, Jan. 29th, was muddy, acid, sp. gr. 1032, and contained only 20 grs. per 1000 of sugar.

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20. *Bronzed Skin—Disease of the Supra-renal Capsules.*—At a recent meeting (Feb. 9th) of the Royal Medical and Chirurgical Society, a paper by Mr. Hutchinson was read, entitled "Some Particulars of a Case of Marked Bronzing of the Skin." The following brief abstract of this paper, and the report of the discussion which followed, will be read with interest as exhibiting the opinions of some of the prominent members of the profession in London, in regard to this important, and, until lately, unnoticed disease.

The woman, whose malady formed the basis of Mr. Hutchinson's communication, was exhibited to the Fellows, and was declared by Dr. Addison to be a good example of that peculiar condition, both of general health and discoloration of skin, which he has found so frequently connected with disease of the supra-renal capsules. Mr. Hutchinson's notes embraced the usual history of these cases. He gave his reasons for arriving at the confident opinion that this was a genuine example of diseased supra-renal capsules, as well as those which induced him to conclude that both organs had probably been destroyed as long as two years, and called attention to the two important points thus illustrated—viz., the length of time during which life may be prolonged in the human subject after destruction of those organs, and, consequently, the necessity for caution in the attempt to deduce conclusions from experiments on the lower animals.

Dr. Addison remarked, that in a matter somewhat novel, and so extremely imperfect, it was natural that any one, although deeply interested in it, must feel considerable reserve in speaking upon such slender testimony as at present existed. If not irregular, he would refer briefly to a case of this kind, brought before the Society a short time ago, as affording what he considered the most perfect and unequivocal, and at the same time the most terrible illustration of the disease to which the attention of the Society was directed. The case was that of a young lady, only eighteen when she died, who was amiable, intelligent, and accomplished, and till about two years before her death, during which period she had been observed to lose health, and strength, and colour, was apparently sound and healthy. When he went to Ashford to see her, he was very much struck with her appearance; for a more terrible sight of disease he never beheld. She was darkened, almost blackened, as if stricken by some supernatural power; she was anæmiated, had a pulse like a thread, and so feeble was the circulation that she could not sit upright without becoming blind. He could not, therefore, entertain a doubt about the case, and did not hesitate to express his confidence respecting it. In no long time she died. At the post-mortem examination there were present besides himself three medical gentlemen, who had been struck during life by their inability to detect a sign of disease in any organ. The body was not particularly emaciated; there was a fair supply of fat in the omentum and the region of the abdomen. All the abdominal viscera were found perfectly healthy. The only vestige of a disease was a small pediculated cyst, about the size of the kernel of an almond, attached to one of the broad ligaments, which he supposed could not have much to do with the malady. A healthier chest he never saw; there was not the slightest adhesion even between the pleura; the lungs collapsed, but were perfectly free from all deposit and trace of disease. The heart, as might be expected, was feeble and flabby; but there was no disease of the organ. They then proceeded to examine the supra-renal capsules. Those capsules were greatly enlarged, especially the left, and both of them were universally converted into a bag of pus, which escaped in considerable quantity. Now, suppose that the symptoms were not resulting from disease of the supra-renal capsules, but from a diseased condition connected with some other lesion not yet discovered, what were the chances of finding these organs diseased? The chances were almost incalculable; and they became much more strongly so when it was remembered that there was no other organ in a diseased condition. The conclusion, therefore, appeared to him inevitable, even if there were no other cases on record, that the discoloration in this case did result from disease of those organs, and probably from disease of those organs alone. We knew, however, that these organs were situated in the direct vicinity, and in contact with the solar plexus and the semilunar ganglia, and received from them a large supply of nerves; and who could tell what influence the contact of these diseased organs might have on these great nervous centres, and what share that secondary effect might have on the general health and in the production of the symptoms presented? He did not know whether there had been hitherto sufficient carefulness of examination to ascertain whether any positive lesion existed in the tissue of the nervous structure; certainly in the case to which he had referred it had not been ascertained. There were, indeed, many objections and difficulties raised upon the subject, and he had seen enough of modified cases to justify many of them. Suppose, for instance, these organs played an important part in the functions of the body, however slowly their lesion might affect the general health or destroy it, it was not impossible to suppose that they might be variously diseased, and in various degrees, and the effects correspond with these various degrees of morbid condition. He could very well understand that the organs might be even functionally diseased, and there might be more or less of the discoloration, and the other symptoms that had been described, without any organic lesion at all, as was the case with other organs of the body. Some time ago a man called upon him with the symptoms of the disease strongly marked; but by good support, sending him into the country, and giving him ammonia and other stimulants, he had shaken off a great deal of the want of tone and energy he formerly manifested, and considered himself, no doubt justly, very much better. He had also a woman in Guy's Hospital, who had a psoas abscess in addition. That woman had been very deeply discoloured, and her constitution appeared very powerfully affected by one or the other, or by both; but she had now more energy than she had some time ago, and her colour was certainly less. From what he had seen of the organic changes that take place he could understand why there should be an arrest, very probably a complete and permanent arrest of the disorder. We knew the depositions that took place into one or both of these organs—more probably into both at the same time—and indicating a special and peculiar tendency of the organs when affected; some would call these deposits scrofulous, some malignant; we knew also the natural course these depositions underwent, softening and being converted into a puriform mass, they became quiescent, having been attended by inflammation during the process; and we could therefore very well imagine that while this limited deposit, not such as to interfere with the whole of the functional part of the organ, was undergoing a change, there would be a very considerable amount of inflammatory action and disturbed function around, which would produce great general distress and discoloration. But that on the softening process ceasing, and the part becoming quiescent, the function of the kidneys would be restored, and the health restored with it. This was, of course, reasoning from what we knew of the disease of other organs. But there were other sources of disputation which were perhaps more avoidable, and perhaps less legitimate. He had cases sent to him of discoloration of the skin, which did not approach to anything like the discoloration attending this lesion. It had, again, been more than once declared that these organs were diseased, and extensively so, when there had been no disease at all. Several supra-renal capsules had been sent to him as samples of diseased organs, and they were in a state of perfect health. Such a case had been published to the world as a remarkable instance of universal disease of both organs, without any discoloration of the skin. It appeared to him that the amount of discoloration had, in the instances he had met with, been connected with the softening process or liquefaction of the contents of the organs; so that where there had been great intensity of discoloration, there had also been great liquefaction.

Dr. Harley said, the profession was greatly indebted to Dr. Addison for having called attention to a peculiar, important, and hitherto unnoticed disease. He had listened with pleasure to the notes of the case, but could not help feeling somewhat surprised at the conclusions of the author. He did not think there was at present sufficient evidence to justify the dogmatic statement that bronzing of the skin was pathognomonic of supra-renal capsular disease. No doubt many cases had been reported in home and foreign journals, in which a peculiar discoloration of the skin was found associated with disease in the supra-renal capsules; but that was not sufficient to establish the relation of cause and effect. Indeed, during the last year a considerable amount of evidence had been brought forward on the opposite side of the question—cases having been reported in which extensive disease of the supra-renal capsules was unconnected with any discoloration. He referred to the cases reported by Ogle, Virchow, Davies, Fredrich, Brittan, Kolb, etc. On the other hand, several cases of bronzed skin had been noticed, unassociated with any textural change in the supra-renal bodies, as that brought before the Pathological Society last summer by Mr. Hutchinson. He did not believe bronzed skin to be the result of any particular disease attacking the glands; for Dr. Addison had just shown that the discoloration accompanied tubercle, cancer, and abscess of the capsules. It had been said that the bronzing of the skin was the result of the suppression of the supra-renal capsular function; but how could that be the case when the discoloration was found in cases where the capsules were perfectly healthy, and was absent where the glands were too extensively diseased to perform their function? In discussing a subject like the present, he considered it better to take a general view of the chromatogenous function of the skin than confine attention to individual cases; and he reviewed in some detail the several causes regulating the deposition of pigment in the skin of man and of the lower animals. Many physiological proofs were deduced to show that the chromatogenous function of the skin was entirely independent of the supra-renal capsular function.

Mr. Hutchinson remarked, respecting the greater part of Dr. Harley's observations, that they were admitted by every one. No one had ever doubted the influence of the sun in browning the skin, and no one had ever dreamt of asserting that disorders of the supra-renal capsules were the only causes of increased deposit of pigment. There were, undoubtedly, many others. With due discrimination, however, there could be but little difficulty on the part of the trained observer in speaking confidently as to the particular form of bronzing which did really result from diseased capsules. He would assert boldly that there was as good evidence in support of the belief that such bronzing as the patient before the Society exhibited was really dependent upon disease of the capsules, as could be adduced in favour of the connection of any of our best acknowledged symptoms with their respective lesions. The pathognomonic indications of change in colour of the skin must be ascertained in each instance by noticing its intensity, the parts on which it commenced, its slowness of progress, and its concomitant symptoms. Above all, the existence of black stains on the mucous linings of the lips was of importance. To say that bronzing was a symptom which, carelessly observed, was very liable to lead to error, was to allege nothing whatever against its value when cautiously appreciated, or to derogate one iota from the worth of Dr. Addison's discovery. In adducing cases of the converse kind, those, namely, in which the supra-renal capsules were found disorganized, whilst no bronzing of the surface existed, Dr. Harley had also neglected to avoid a very palpable source of error. All such cases were examples of *recent* disease of the organs. Now, as bronzing required for its production a very prolonged interval, probably not much less than a year, it could not reasonably be expected in such cases. The patients died before it had time to appear. No single instance had, as far as he was aware, yet been recorded in which the disease of the capsules was such as to make it probable that it had been long present, or in which the constitutional symptoms had existed for more than a few months before death, where the bronzing had not been noticed in greater or less degree.

Dr. Harley did not deny the importance of the functions the supra-renal capsules had to perform; in fact, no organ of the body could be considered unnecessary. Still, it could not be said that they were indispensable to life, for patients often lived for some time after the arrest of those functions. In the case of Professor Walshe's patient, which he had recently brought before the Pathological Society, the medullary substance of both organs was totally replaced by tubercle, and even the cortical substance had almost entirely disappeared, for only here and there could traces of the columnar cell masses be detected. No doubt in that case the function of the capsules had been temporarily performed by some other organ. The capsules could certainly be removed from the lower animals without the destruction of life; he had now alive and well a rat from which he extirpated the supra-renal bodies and spleen six months ago. Brown-Séquard, in a paper recently read to the French Academy, had stated that the reason why M. Philipeaux's and his (Dr. Harley's) animals lived after the removal of the capsules was that they were albinoes; but this was not the case, for he had kept alive for several months animals that were not albinoes. A piebald rat which he once had in his possession became quite fat and healthy after the removal of both supra-renal capsules, but died subsequently from the effects of the removal of the spleen. In cases where death had followed the removal of the capsules, it might in the majority of cases be traced to the injury done to the solar plexus. It might be taken for granted, that the more intimate the connection between the capsules and the ganglions, the more fatal were the operations; and the further removed the capsules were from the ganglions the more successful was the result; for instance, the removal of the capsules from the guinea-pig was more fatal than from the dog, from the dog than from the cat, and from the cat than from the rat; and in the same species of animal the removal of the right capsule was more fatal than the removal of the left, from the same cause; the right capsule being as a general rule very much nearer to the solar plexus than the left. At present, however, there seemed to be no physiological evidence to show that either of the supra-renal capsules was absolutely essential to life, or had any direct connection with the chromatogenous function of the skin.

Dr. Addison said he hoped Dr. Harley would not continue to entertain the notion, that he attached extraordinary importance to the discoloration of the skin. The term "bronzed skin" did not originate with him. All he ventured to do was to describe the diseased condition that he met with; and the earliest indication to the eye was this discoloration of the skin. He believed the disease might occur, and had occurred, without any discoloration of the skin. A case occurred at Guy's Hospital, where all the symptoms were those indicative of the disease, and a physician there expressed his astonishment that he should not have recognized it, notwithstanding the absence of the discoloration of the skin; and after death the lesion of the capsules was found. He should like this simple fact explained to him by the gentleman who spoke last. He saw a patient who presented this peculiar discoloration of the skin; he offered no explanation as to whence, or how, or why it came. He observed associated with that discoloration a certain train and combination of general symptoms —a pearly eye, a feeble pulse, a disposition of strongly-marked anæmia, and a few other symptoms less constant and less urgent; and when he met with that combination he said, "There is a case in which you will find disorganization of the supra-renal capsules." The body was examined; no other organs were found diseased, but these organs were found in a state of universal suppuration. He did not profess to explain this; he knew no more about it than other people: but he believed, when the disease did occur in these organs, it led to these consequences and to inevitable death.—*Med. Times and Gaz.*, Feb. 20, 1858.

21. *Treatment of Inflammatory Diseases of the Respiratory Organs.*—Dr. Semple read before the Medical Society of London (Jan. 16th, 1858) a paper on this subject. He commenced by observing that the treatment of pneumonia was formerly supposed to consist almost solely and essentially in the abstraction of blood from the arm; but that in the present day, not only in this, but in other inflammatory diseases, the use of the lancet was but seldom resorted to, and by many practitioners it was abandoned altogether. It became a question whether this great alteration in treatment was due to the varying fashion of the day, or to the fact that disease had, in fact, altered its type, and therefore required very different treatment from that formerly adopted. He (Dr. Semple) was inclined to believe that disease had really altered its type, for he and others had, at the commencement of their professional career, bled patients very constantly, and certainly with good results, but at present the operation of venesection was not so much required. He had been for the last three years connected with the Northern Dispensary, where all the usual forms of disease presented themselves to his notice, and he had recommended bleeding only once during the whole of that period in that institution. The fact appeared to be, that the sthenic inflammatory diseases were dying out amongst us, and that asthenic complaints were taking their place. The cholera which visited this country in 1832, was certainly a disease of depression, and this was immediately followed by the influenza, a disease of the same depressing class, and, like it, requiring a tonic plan of treatment. Since the date referred to, neuralgia, also a disease of depression, had become almost epidemic; carbuncles and carbuncular boils were at present decidedly so; and Bright's disease, the disease of the supra-renal capsules giving rise to the bronzed skin, and the disorders classed under the head of fatty degeneration, were all much more prevalent than formerly, even if we do not admit them to be new diseases. In fact, it now became a question whether bleeding should ever be practised at all, and he (Dr. Semple) was as cautious in ordering a patient to be bled as a surgeon would be in deciding upon the amputation of a limb. Nevertheless, although the cases which were met with in practice required in general the adoption of tonic and stimulating treatment, it was by no means proved that all forms of disease were characterized by depression; for cases of a sthenic type still presented themselves, and demanded the application of antiphlogistic measures. The remarks made upon the treatment of inflammatory diseases in general were particularly applicable to those of the respiratory organs, which are essential to life, and the inflammations of which require the most prompt and judicial medication; still it was impossible that any stereotyped rules could be laid down for the treatment of these affections, which may present the most opposite therapeutical indications.

The author then related the case of a lady in whom the treatment by bleeding, calomel, and tartrate of antimony was adopted for an acute inflammation of the larynx and trachea, extending to the bronchial tubes, substance of the lungs, and pleuræ. This treatment not having at first produced a well-marked effect, the antiphlogistic plan was changed for a stimulating one, and carbonate of ammonia and brandy were employed while the acute symptoms still continued. The result was, that the patient became decidedly worse, and appeared to be on the point of death by suffocation; but on again changing the plan, and resorting to bleeding, low diet, and tartrate of antimony, the disease gradually subsided, and the patient, who is now alive and well, was restored to perfect health, without any trace whatever of the previous illness.

Dr. Semple wished that it should be understood that he had no dogmatic views to offer upon the treatment of the inflammatory diseases of the respiratory organs. He could not advocate indiscriminately large bleedings, profuse mercurialization, and repeated doses of tartar-emetic; nor, on the other hand, could he approve of the universal adoption of the plan of stimulating such cases by brandy and carbonate of ammonia; and it was difficult to determine which would be the greater error of the two. He believed that many cases of pure sthenic inflammation still presented themselves in practice, although they were by no means so common as they formerly were; and in such instances the abstraction of blood, and the administration of mercury, of the alkalies and tartar-emetic, will effect a cure. But there are in the present day a great number of epidemic, contagious, and diathetic forms of disease, which are, it is true, accompanied by inflammation, but of a low or asthenic character, and these require tonics, alteratives, and stimulants. Undue depletion ought to be avoided in persons who are the subjects of the gouty, the venereal, or the scrofulous diatheses; and whenever any of these affections co-exist with, or precede inflammation, the disease ought not to be considered as of a sthenic character, and the cure should be sought rather by correcting the prevailing morbid taint in the system than in indiscriminate depletion; and some of these constitutional maladies, especially scrofula, required cod-liver oil, iodine, iron, meat, wine, and beer.

The paper concluded with a sketch of the treatment of pneumonia as it presented itself in children, in vigorous adults, in the inhabitants of towns and cities, in persons labouring under fever, in its typhoid form, and in its complication with tubercular phthisis, in each of which cases, although the name of the disease was the same, yet the treatment required was very different, owing to the peculiar features which the malady assumed.

In the discussion which ensued, Dr. Routh, Dr. Camps, Dr. Webster, Dr. Cotton, Dr. Chowne, and Dr. Stocker took part. The debate elicited nothing very striking or novel; but it was remarkable that none of the speakers spoke in favour of the stimulating plan of treatment in inflammatory diseases of the chest.

Dr. Semple, in reply, feared that the nature of his remarks had been misunderstood by some of the speakers. So far from advocating the indiscriminate use of bloodletting, his paper had just the contrary tendency; and he believed that a medical man was bound to dispossess himself of all dogmatic opinions, and to treat his patients in such a manner as would most rapidly restore them to health. This could only be done by studying the peculiarities of every case, and paying strict attention to all modifying circumstances. However valuable statistics might be, he thought that they did not throw much light upon practice; and as to the number of cases which, it was said, recovered from pneumonia in the Vienna Hospital without any treatment at all, it was not stated what the peculiar forms of the disease were, or what were their complications, and the results might be quoted to support any doctrine whatever. He thought that the subject of the modern treatment of the inflammatory diseases of the respiratory organs, and of inflammatory diseases generally, was a very proper one for debate in medical societies; and as the arguments were not yet by any means exhausted, he hoped that others would continue the discussion upon some future occasion.

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22. *Treatment of Pleuro-Pneumonia.*—Dr. S. O. HABERSHON, Ass. Phys. to Guy's Hospital, draws the following inferences from certain cases he has observed and recorded.

1. That active mercurial, antimonial and opiate medicines are not necessary in many cases of pneumonia, even without depression, and when seen at an early stage.

2. That convalescence rapidly takes place in many instances under the saline plan of treatment, as bicarbonate of potash, as shown by Dr. Hughes Bennett and others.

3. That while some cases of pleuro-pneumonia, especially in young subjects, as several of the cases related were, may recover, even without any medical treatment, that salines appear to be of some value, perhaps by increasing the action of the secreting organs, modifying the character of the blood, and hastening the absorption of the effused product.

4. That in other instances, mercury appears to be of considerable value, as in cases where there is considerable pleuritic effusion.

5. That, in some, especially where there is much bronchitis, with great febrile excitement, without prostration or struma, antimony also is of much service; but that the indiscriminate use of calomel and antimony in very many cases retards convalescence, interferes with the return to healthy nutritive action, and should be avoided.

6. That opium alone, or as its alkaloid morphia, is also a valuable remedy in pneumonia, either combined with ipecacuanha, as in Dover's powder, or with antimony, when that is admissible; that it acts possibly by diminishing the frequency of the respiratory act, by its action on the nervous system, increasing diaphoresis, when combined as just mentioned; quieting the nervous system, relieving pain, and diminishing the excitability of the nervous system, and diminishing the excitability of the bronchial tubes.

7. That while, in some cases, general or local bleeding may be called for, such are exceptional cases now; and that many instances, on the contrary, require the liberal administration of nourishing diet, and in some cases stimulants.

8. That each case must be judged by its own peculiarities; and whilst many, from their age and other circumstances, will probably recover under most varied treatment, other cases, of which I might adduce many instances, almost invariably die, as those arising in very intemperate habits, or where it follows in the course of pyæmia and allied conditions. We have thus sought by these instances to show that, whilst calomel and antimony are sometimes of value, much more frequently they may be dispensed with altogether in cases of pleuro-pneumonia, rapidly advancing to consolidation of the lung, where a comparatively short time ago these remedies would have been prescribed.—*Med. Times and Gaz.*, Nov. 28, 1857.

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23. *Hydropneumothorax treated by Paracentesis Thoracis and Injections of Iodine.*—Three cases of this under the care of Prof. Trousseau are recorded in *L'Union Médicale* (Oct. 31, and Nov. 10, 1857), one of which proved fatal, and the other two resulted favourably. In the former, death did not ensue till six weeks after the operation; the disease for which it was performed having been complicated with phthisis, which was not positively diagnosed during life, it would not be just to impute the fatal result to the operation.

The most completely successful of the three cases was the second, of which the following is an outline: A man was admitted into the hospital, November, 12, 1856, six weeks after having suffered serious injury by being squeezed between two carts. He was still in great pain, the right side of the thorax presented a considerable elevation; there was dulness posteriorly as far as the spine of the scapula, and the respiratory murmur was inaudible at the base of the chest; in the infra-spinous fossa there was a blowing sound, egophony, metallic tinkling, and hippocratic succussion caused a splashing which was audible at a small distance from the thorax. In the subclavicular space the percussion sound was abnormally clear. The abdominal organs were forced downwards, the liver projecting considerably below the false ribs. There was frequent cough, with expectoration, which was at times bloody and rusty, at others frothy and colourless; respiration was quick and painful, the pulse small, about 120. The patient's strength was good. M. Trousseau diagnosed hydropneumothorax, and on introducing a trocar between the seventh and eighth intercostal space, 5½ litres (nearly twelve pints) of an odourless purulent fluid were evacuated; and having entirely emptied the pleura, 258 grammes of an iodized solution were injected, which was partly removed after a few minutes, and the wound shut up. No inconvenient symptom followed; the wound healed up in the course of eight weeks, during which it continued to discharge a purulent serosity. The chest by this time had collapsed on the right side; the vesicular murmur was everywhere restored, but feeble, and mixed with mucous rales in some points posteriorly; in front it was pure and audible, even on the level of the puncture. The patient left towards the end of January, and soon after was well enough to return to his employment as carman.

The third case occurred in a man, aged thirty-five years, as the result of pleurisy of the left side. The operation was performed as in the last case, followed by iodized injections,[1] repeated no less than twenty-four times at different intervals. The patient did well; the left side of the chest fell in, and the percussion sound of the part affected was restored almost to the normal condition; but five months after the operation the orifice made by the trocar still continued to discharge a small quantity of pus, and it was feared that there was tubercular deposit in the lung, to combat which the hypophosphite of lime was prescribed according to the formula of M. Churchill.

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[1] Fifty grammes of tincture of iodine, five grammes of iodide of potassium, with one hundred to one hundred and twenty grammes of water.

In the remarks that conclude the article, the propriety of performing the operation is dwelt upon, and the iodized injections are spoken of as the only remedy by which we may hope to obtain a cure of purulent effusions, and of hydropneumothorax even, without serious danger.—*B. and F. Med.-Chirurg. Rev.*, Jan., 1858.

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24. *Specific Treatment of Consumption by Salts of Phosphorus.*—Dr. J. F. Churchill, in a memoir presented to the Imperial Academy of Medicine, claims to have discovered that phosphorus, in certain combinations, is a specific remedy for phthisis. A few months previously, Dr. C. had proposed its employment at the hospital for consumption at Brompton, but having declined to make known its composition, the Medical Board very properly refused to make trial of it. As the remedy has now been made known, and its efficacy so confidently vaunted, Dr. R. P. Cotton, Physician to the Hospital, &c., at Brompton, thought it his duty to give it a fair trial, and he has published (*Med. Times and Gaz.*, Feb. 13, 1858), the results.

Dr. Churchill is of opinion that the direct cause of tuberculosis is the decrease in the system of the normal proportion of phosphorus in an oxygenizable state, and that the natural remedy should be sought in some compound of phosphorus, at the lowest possible degree of oxidation. The hypophosphites appeared to him to offer the nearest approach to such a quality; and of these he selected the hypophosphites of soda and of lime, as being the most soluble and "assimilable." "They produce," he observes (p. 15), "a manifest increase of nervous power, sometimes even from the first day of their administration, together with an unusual feeling of comfort and strength. At the same time the nervous symptoms, if there have been any, disappear, as well as the functional derangement, such as weight, etc., of the intestinal mucous surface. The appetite increases, often in an extraordinary manner. The evacuations become regular, and more abundant; the perspirations, if they have existed, cease; sleep becomes calm and profound." He administered it to thirty-five consumptive patients, all of whom were either in the second or third stage of phthisis. Of these, "nine were completely cured, eleven experienced great melioration, fourteen died," and one was still under treatment.

Dr. Cotton's experience with this remedy he states "is based upon carefully made observations upon twenty of my own in-patients at the Hospital for Consumption. Copious notes were taken by Dr. Walker and Mr. Ford, the resident clinical assistants; and are open to the inspection of those who may be desirous of obtaining more information than I am able to offer in the present communication. Dr. Churchill's rules for administering it were carefully attended to; five grains dissolved in water, with the addition of a small quantity of syrup, being given three times a day. The cases consisted of nine males and eleven females, all of whom were adults. Three were in the first stage of consumption, five in the second, and twelve in the third. All were affected with the disease in its simple form, there being no other than the ordinary complications. The remedy was administered for a fortnight, notes being regularly taken; if, at the expiration of this period, no improvement was observable, it was discontinued; but, if the patients expressed themselves relieved, other medicines were prescribed, with the view of testing whether such relief was fairly attributable to 'specific' agency, or to other circumstances—such as improved diet, rest, etc., which should always be taken into account in estimating the effect of medicinal agents upon hospital patients.

"Of the three patients in the first stage of the disease, two were not perceptibly influenced by the hypophosphites, but afterwards improved considerably under tonic treatment, and cod-liver oil; the other considered himself much stronger, but before admission to the hospital he had been almost starved, so that good diet, etc., may reasonably claim a fair share of the credit; and he left before other medicines could be tried.

"Of the five patients in the second stage of the disease, two were not in any way influenced by the hypophosphites, but subsequently expressed themselves as feeling 'much better' under tonic treatment with cod-liver oil; two slightly improved, but one of these afterwards advanced at a much more rapid rate under steel and oil, and the other seemed to get on quite as well under steel and quinine; the remaining one became much worse, from a gradual advance of the malady.

"Of the twelve patients in the last stage of the disease, one felt herself better under the hypophosphite, than under any other remedy; one improved greatly, but not more than under the subsequent use of other tonics; three improved slightly, but afterwards progressed much more rapidly under steel and cod-liver oil; two were not at all benefited, but found themselves 'much better' under a change of treatment; in two cases no effect was observed, and in spite of all treatment, the disease ran on: one of the patients became worse, but subsequently gained strength under the oil and quinine; the remaining two died.

"Thus, in only two instances could this remedy be said to act with any marked benefit, and in one of these its good effect was very equivocal, the patient, previous to admission, having been in an almost starving condition, and leaving the hospital before the comparative trial could be made with other medicines. In all the rest, it acted certainly in no way as a 'specific;' in most, it seemed to be inert; and the few cases which slightly improved during its administration, were evidently instances of the *post*, and not the *propter hoc*, since some advanced equally, and many of them more rapidly, under the subsequent use of steel or quinine, with cod-liver oil.

"It is very possible that the compound of phosphorus, proposed by Dr. Churchill, may, in some cases, have a tonic and beneficial influence; but to any 'specific' action upon tuberculosis, it seems to have no claim.

"In a foot-note to the tabular statement made by the above-named clinical assistants, I find the following remarks by Mr. Ford: 'As far as we can judge from these cases, it is obvious that the hypophosphites are of no therapeutic value, whatever, in the treatment of phthisis; indeed, they seem to be simply inert, doing neither good nor harm, except indirectly in the latter sense, by interfering with more positively beneficial modes of treatment.' This opinion is fully indorsed by Dr. Walker.

"The employment of phosphorus in the treatment of phthisis is by no means novel. For the last eight or nine years I have been in the habit of using a mixture consisting of the dilute phosphoric acid, with phosphate of iron; and at my suggestion, it has been inserted in our hospital Pharmacopœia. In many cases much good has attended, and I think I may say been produced by, its administration; but I attributed to it no *specific* action. I believe it is a simple tonic, adapted to certain depressed states of system.

"Phosphorus is a well known, and apparently necessary constituent, of all healthy nerve structure; and, in some conditions of low nervous vigour, its medicinal employment may be of very great service. We find that it enters largely into the composition of the most nutritive kinds of grain; and we may be quite sure that it is not placed there without a purpose.

"If phosphorus, then, be no specific for phthisis, but a simple tonic, acting usefully in certain lowered states of nervous energy, are we to seek further for specific remedies for this most intractable of all diseases? I believe the search will ever be futile. Until we know what *life* really is; until some new aid can be brought to bear upon its demonstration; until we find out in what consists that diminished power of vitalizing new products, as exhibited in the formation of tubercle, and other imperfectly organized substances from the blood, we must be content with treating consumption, as at present, with tonics and cod-liver oil."

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25. *Effect of Local Influences on Spasmodic Asthma.*—Dr. Hyde Salter read a paper on this subject before the Medical Society of London (Dec. 5th, 1857).

The purport of it was to show that, in a very large proportion of cases of asthma in which it has been fairly tried, change of locality effects an instantaneous cure, which is permanent as long as the asthmatic continues his residence in the place that has cured him. The author remarked that, although the subject of his paper was a single method of cure of a single disease, yet that the efficacy and completeness of the cure, and the painfulness and intractability of the complaint, vindicated it from unimportance; and, indeed, that in so distressing and unmanageable a disease, any remedy that offered even a small percentage of cures might be considered the greatest possible boon. The paper was illustrated by nearly thirty original cases, and the points that the author considered to be established were as follows:—

*a.* That residence in one locality will radically and permanently cure asthma resisting all treatment in another locality.

*b.* That the localities which are the most beneficial to the largest number of cases are large, populous and smoky cities.

*c.* That this effect of locality depends, probably, on the air.

*d.* That the air that would be imagined to be the worst for the general health is, as a rule, the best for asthma; thus the worst parts of cities are the best, and conversely.

*e.* That this is not always the case, the very reverse being sometimes so—a city air not being tolerated, and an open, pure air effecting a cure.

*f.* That there is no end of the apparent caprice of asthma in this respect, the most varying and opposite airs unaccountably curing.

*g.* That, consequently, it is impossible to predict what will be the effect of any given air, but that probably the most opposite to that in which the asthma seems worst will cure.

*h.* That some of these differences, determining the presence or cure of asthma, appear to be of the slightest possible kind, arbitrary, and inscrutable.

*i.* That the mere conditions of locality appear to be adequate to the production of asthma in a person whose disposition to it was never before suspected, and who probably never would have had it, had he not gone to such a locality.

*k.* That, consequently, probably many healthy persons who never have had asthma, and never may, would have been asthmatics if their lot had been cast in other localities.

*l.* That possibly there is no case of asthma that might not be cured if the right air could only be found.

*m.* That the disposition is not eradicated, but merely suspended, and immediately shows itself on a recurrence to the original injurious air.

*n.* That change of air, as change, is prejudicial.

*o.* That, from the caprice of asthma, the constancy of the result in any given case is often deranged.

The cases that were cited were very illustrative of these several positions, and some of them were of great interest. In reference to the frequency with which London air is beneficial to asthma, the author remarked that he was in the habit of putting to country asthmatics the two questions: "Have you ever been in London? have you ever had asthma there?" and that, if an affirmative answer was given to the first question, a negative one was pretty sure to be given to the second. In his own experience he had found hardly any exception to this rule.

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26. *On Œdema Glottidis.* By Professor PITHA.—In an interesting article of considerable extent, on the whole subject of tumefaction of the glottis (which applies rather to the epiglottis and the aryepiglottic folds than the true glottis), we find the following instance of acute œdema, assumed to have been brought on in a healthy person by an article of diet.

Madame Grabinger, a robust ruddy woman, aged thirty, on a hot summer's day felt poorly and faint immediately after her dinner, which she had enjoyed in perfect health. She lay down on the sofa and went to sleep quietly. After about half an hour the children observed that their mother breathed laboriously and noisily, so that they roused her. She awoke with difficulty; her face was distorted, pale, and swollen; the voice hoarse; the respiration became more laborious; the patient complained in broken words of constriction of the throat, and a sense of suffocation. A few minutes later, Professor Pitha found the patient wringing her hands in a state of most distressing dyspnœa. The features pale and frightfully swelled, and the whole neck alarmingly swollen. The voice had entirely disappeared, and the patient implored assistance in the most painful manner, constantly pointing to the larynx. The Professor could obtain no clue from the children, but on looking round the room he perceived a plate with a few strawberries; on pointing to them interrogatively, the patient nodded violently, evidently gratified by his suspicion. He at once prescribed an emetic of tartrate of antimony, which put an end to the symptoms as speedily as they had supervened. After the first spoonful copious vomiting ensued, accompanied by a discharge of masses of mucus, upon which respiration at once became easy, and voice and speech returned. The tumefaction of the face and the other symptoms gradually disappeared, and on the following morning the patient was quite recovered. Professor Pitha analyzes the symptoms, and while he admits that the presence of œdema was not absolutely proved, he maintains that all rational signs of the affection showed it to be there.—*Brit. and For. Med.-Chirurg. Review*, Oct. 1857, from *Prager Vierteljahrsschrift Jahrgang* xiv., 1857.

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27. *Acute Rheumatism caused by large doses of Hydriodate of Potass.*—Dr. CHARLES CAMPBELL extols (*Dublin Hosp. Gaz.*, Feb. 1, 1858), the efficacy of the hydriodate of potass in the treatment of acute rheumatism. He gives the article in large doses—ten grains every four hours.

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28. *Principles of Treatment in Chronic Rheumatism.*—Dr. INMAN read an instructive paper on this subject, before the Liverpool Medical Society. He adverted to the frequency of the occurrence of chronic rheumatism, and the multiplicity of the plans of treatment employed for it; remarking that they all, however, possessed something in common. Difficulty as to diagnosis, and confusion as to treatment, he thought had arisen from the practice of classing all sorts of aching pains under one head, as rheumatic. The uneasy sensation experienced before the access of eruptive fevers, and during the course of malignant disease, or felt by those exposed to the action of mercury or lead, and by those suffering from gout, gonorrhœa, or syphilis, and in cases where it was evident that bile or urea was mixed with the blood, and by children affected with struma—had all been set down as rheumatic, though due to most varied causes. The term "chronic rheumatism," he believed strictly applicable to cases in which there is dull pain, usually coming on during the night, referred to the tendinous expansions of the muscles, the pulse not quickened, the skin warm, excepting over the seat of pain, where the temperature is usually low; the pain remitting about 4 P. M., and not recurring till some time during the night. There is usually no error of secretion, nothing visible at the seat of pain. The duration may be from one or two days, to six weeks. Deposits in the joints rarely take place; and that form which causes gradual contraction of joints, and crippling of limbs, is rare. The rheumatic pain is usually symmetrical; its chief seats those parts least protected by fat and integuments. Loss of motor power accompanies the pain, which is increased by action, and relieved by relaxation of the affected parts. Rheumatism is not occasioned by dry and intense cold, but by the more moderate degrees of cold, especially if the air be moist. The experience of Arctic navigators, and of the army before Sebastopol, as well as the comparative rarity of rheumatism among carmen, carters, and bricklayers, confirm this point. Firemen of ocean-going steamers appear particularly liable to it. Persons of feeble constitution and languid circulation are more obnoxious to it, than those with good circulation. It is not common in women, except at advanced ages. The vigorous action of the heart helps to remove the pain, as is evidenced by the improvement which generally occurs after dinner. In a case where there was great pain and stiffness in the arms, hands, and deltoid muscles, the immersion of the arms in very warm water removed the pain for the time. Many rheumatic patients feel quite well in a warm bath; though often worse after it, from increased sus-

ceptibility. The influence of temperature on the local circulation has much power over rheumatism. Patients take cold often through sitting near cold walls, &c. The cause of the pain is probably, primarily, the contraction of the pale muscular fibres of the skin, the stagnation of blood in their capillaries; the hot aching pain which succeeds, being due to reaction and dilatation of the vessels: the one efficient cause of rheumatic pain in general, being deficient flow of blood through the affected parts. With regard to treatment, the author thought that no satisfactory results could be ascribed to colchicum, in large or small doses. Warm baths are useful in some cases. Nitrate of potash had proved useful in the hands of some, but he thought the iodide of potassium had a stronger claim to efficiency. Guaiacum, aconite, opium, steel, and cod-liver oil, all prove useful in some cases; and the local application of heat by packing in wet sheets, blisters, sinapisms, heated irons, red flannel, and red merino, also. The indication appears to be, to restore the strength of the individual, and the vigour of his circulation. In the most troublesome form, pain in the plantar fascia, was removed by perfect rest and galvanism.—*Liverpool Medico-Chirurgical Journal*, July, 1857.

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29. *Perchloride of Iron in the Treatment of Erysipelas.*—The use of perchloride of iron in the treatment of erysipelas has lately been brought again into notice by the publication of a thesis by M. LOUIS MATHEY, and by some observations made by M. ARAN, physician of the Hôpital St. Antoine in Paris. M. Mathey relates ten cases of erysipelas treated with this medicine, and his conclusions are contained in the following remarks:—

The action of perchloride of iron on erysipelas is evident, and the course of the disease is modified a short time after its administration. In fact, on the second day, and sometimes even on the first, M. Mathey has seen the disease become limited and circumscribed, and its further progress arrested. As to the duration of the disease, the effect of the perchloride is still very remarkable: not only is the progress of the erysipelas sensibly modified from the first few hours which follow the administration of the medicine, but it is completely arrested; the radical cure of the disease is obtained in a very short time. It was observed that in ten rather severe cases of erysipelas treated by the internal use of perchloride of iron, three were cured in two days, three were cured in three days, two were cured in four days, one in five days, and one in seven days. It cannot therefore be denied that erysipelas is advantageously modified by the internal use of chloride of iron; that the cessation of the symptoms proper to erysipelas is sometimes very rapid after the administration of this medicine; that in a series of ten observations, made upon varied cases, this treatment never failed; that even where its efficacy may be doubted it has never given rise to any bad symptom; and that when administered in the dose of thirty drops to a healthy subject, it has never given rise to any painful sensation, and has never produced any notable functional disturbance.

M. Aran agrees with M. Mathey in never having observed any unfortunate result from the administration of the perchloride of iron in larger doses than those employed by M. Mathey—namely, thirty, fifty, sixty, and one hundred drops a day, in certain exceptional cases. But a wider and more extensive experience of the employment of the perchloride has shown him that there are particular circumstances which favour the action of the medicine. M. Aran believes that it would be vain to expect advantageous results from the administration of perchloride of iron in all cases of erysipelas. He is convinced that some cases of erysipelas will not yield to this remedy; as, for instance, the cases which occur in young, strong, and robust subjects of a sanguine temperament, and which are accompanied by a well-marked inflammatory action. On the other hand, the cases of erysipelas which are developed in feeble, delicate subjects, of a well-marked lymphatic or scrofulous temperament; in individuals already weakened by previous diseases; the cases especially which exhibit, with well-marked tendency to spread, the œdematous form; and in which, even with a marked acceleration of the pulse, the arterial throbs are weak and easily depressed, or when fever is completely wanting, as happens sometimes in old persons; these cases are remarkably modified and often arrested in twenty-four, thirty-six, or forty-eight hours, by the administration of the perchloride. The erysipelas, which is still more atonic, and which supervenes in the course of serious diseases, around punctures, abrasions, or lacerations of the skin, at other times even without appreciable causes, are amenable to the perchloride of iron. Lastly, the cases which, even when they show themselves in strong and robust subjects, after having been reduced by various and appropriate treatment, still linger on and pass from one part to another, throwing out unexpectedly its eruptions in places where the disease appeared to have been long extinguished; such cases are often terminated in twenty-four hours by the perchloride of iron.

Another point connected with this subject is the propriety of administering the perchloride as a prophylactic. "There are certain epochs and years," says M. Mathey, "when cases of erysipelas of traumatic origin are multiplied to infinity, and show themselves in such great number, that the disease is truly epidemic. The application of a seton, a moxa, or a blister, is followed by erysipelatous inflammation: and, *à fortiori*, the great wounds united by sutures and bandages of diachylon are almost infallibly attacked with the disease. The surgeon who operates under these circumstances is pretty sure to see erysipelas among his patients. It would perhaps be proper to postpone the operation, but sometimes the case is urgent, and the surgeon would think himself fortunate and could act with more confidence if he could hope to put his patient beyond the reach of a troublesome complication; might we not, for the first few days which follow a delicate operation, and during which inflammation is to be feared, unite with soothing beverages some drops of perchloride of iron, because it is fully established that its use in moderate doses is not followed by any bad effect?"—*B. and F. Med.-Chirurg. Rev.*, Jan. 1858, from *Bull. Gén. de Thérap.*, July 15, 1857.

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30. *Guarana in Chronic Diarrhœa.*—Dr. Herve, of Lavour, calls the attention of the profession to the employment of a substance which is in common use in South America, and particularly in Brazil, where cases of diarrhœa and dysentery present themselves in a very severe form. Those who inhabit that country know that every family has a little provision of guarana, and that as soon as any one is seized with diarrhœa or dysentery, a little of the substance is scraped and infused in a cup of boiling water, which is swallowed at once with or without sugar. Dr. Hervé, following the advice of Dr. Mialhe, has given it in infusion, in sugared milk, and it is then much more agreeable, and does not lose its special characters. For the last five or six years he has employed this medicine daily; it has never failed him in the most obstinate cases of idiopathic diarrhœa, and almost always it has ameliorated the condition of the patient even in the most serious symptomatic cases. The guarana or *paullinia* has been also employed in the treatment of headaches; and it has succeeded in some cases connected with gastric derangement, but it has failed in others.

The guarana, as a medicine, was first described by Cadet de Gassicourt, in 1817, from a fragment which had been brought to him from Brazil by an officer attached to the French embassy. On this specimen a ticket was fixed, importing that this substance was much employed in Brazil for cases of diarrhœa and dysentery. Towards the close of the year 1822, an inhabitant of the same country, M. Gomès, sent to Mérat a complete specimen; it was a mass presenting the form, colour, and volume of a sausage; there was joined to it a very rough bone, intended to act as a rasp, and which is always sold with the medicine. The learned botanist, Martius, afterwards occupied himself in discovering the plant which yielded the guarana, and he classed the climbing shrub which furnishes the guarana seeds among the Sapindaceæ, under the name of *Paullinia sorbilis*, in consequence of its employment as a drink. It may be used in the form of pastiles, syrup, pills, tincture, and pommade, as well as in powder, and in combination with chocolate.—*B. and F. Med.-Chirurg. Rev.*, Jan., 1858, from *Bull. Gén. de Thérap.*, May 15, 1857.

31. *Use of Kameela as an Anthelmintic.*—Mr. Arthur Leared relates (*Med. Times and Gaz.*, Dec. 19, 1857) a case of tape-worm in which most of the usual remedies were tried without effect, and in which the kameela (the powder from the capsules of the *Rottlera tinctoria*) was successfully used.

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32. *On the Employment of Tartarized Antimony in the Treatment of Chorea.* Dr. Adrien Marcotti, in a recent paper (*Bull. Gén. de Thérap.*, July 30, 1857), gives an account of two cases of epilepsy successfully treated by M. Bouley, at the Hôpital Neckar. In the first case, that of a young girl, the chorea had lasted a month, and was increasing in intensity. Large doses of the tartar emetic were given on two successive days, and thirty hours after the first administration of the medicine, all choreic movement disappeared. The patient was at first thrown into a considerable state of depression, but some moments of sleep sufficed to restore her, and the appetite was soon found to reappear. The muscular disorder disappeared, but a bad state of the constitution remained, and recourse was made to tonic medicines to improve her condition. The chorea reappeared under the influence of a fit of passion, but on the administration of the tartar emetic it again subsided. In the second case, the chorea was at first general, and almost immediately became partial. It resisted for six months and a half sulphurous baths, chalybeate tonics, and strychnine, and yielded in twenty-eight hours to the employment of tartar emetic.—*B. and F. Med.-Chirurg. Rev.*, Jan., 1858.

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33. *Lactate of Zinc in Epilepsy.*—Dr. Herpin's name is familiar to the medical profession on account of his urgent advocacy of the employment of oxide of zinc in the treatment of epilepsy. He now abandons this preparation entirely in favour of the lactate of zinc. The greater solubility and digestibility of the latter would *à priori* engage our sympathies in its favour. The following is one of the cases which have decided the author's preference, and deserves to be recorded on account of the success obtained in spite of the unfavourable prognosis which the case would have justified in the first instance.

Miss E., aged eleven and a half, consulted Dr. Herpin, February 1st, 1854. She was well made, intelligent, and pleasing. Her paternal grandfather had died epileptic at forty-nine years of age; her maternal grandfather at seventy-six, after being insane for six years, and in a state of melancholy for forty years. No predisposing or exciting cause was traceable in the patient, excepting perhaps the fright caused by a fire two months previous to the first attack. She enjoyed excellent health till six years of age, when she had typhoid fever, having on the right side a tendency to slight and evanescent deafness. Three months before the first seizure she was attacked with frequent headache, generally commencing in the morning, and lasting till evening. The headache ceased in December, 1853. The first fit occurred on August 15, 1853, the second on September 5, the third on September 26; six then followed at variable intervals, making altogether nine in less than five months; they always took place during the first hour of sleep, and the evening before the attack she was observed to be somewhat excited. The symptoms, which are detailed, leave no doubt as to the attacks having been those of genuine epilepsy. The oxide of zinc had been prescribed for the patient from September to the following July, but she was unable to bear the doses which Dr. Herpin thinks necessary in order to make a proper impression upon the patient. He was once able to reach a dose of six grammes (ninety grains) per week, but he was obliged to diminish it. Still the attacks ceased, from January the 8th to July the 18th; but a return on that day, brought on by a tepid bath, induced M. Herpin to have recourse to the lactate of zinc, which he gave for above six months, during which time the patient swallowed 306 grammes (4600 grains). The tolerance of the remedy was complete, and when she left off taking it, she was in perfect health. There was one recurrence of epilepsy two months after commencing the lactate. Three years have since elapsed, and the lady's health continues sound.—*B. and F. Med.-Chirurg. Rev.*, Jan., 1858, from *L'Union Méd.*, No. 121, 1857.

34. *Therapeutic Action of Chlorate of Potash, with a New Mode of Administering it.*—Dr. DETHAN considers that chlorate of potash is a powerful sialagogue, and that its elective action on the bucco-pharyngeal mucous membrane is well marked. To this physiological action is added a very remarkable and valuable success in pathology; its rapid and incontestable effects in mercurial salivation, by checking the formidable mercurial affection, have permitted practitioners to continue the mercury without fear, and thus to contend without remission against the constitutional infection. As an especial and incontestable remedy in ulcero-membranous stomatitis, this medicine need not, according to the physicians of the Hôpital Sainte-Eugénie, be swallowed; its topical application is sufficient, and in a short time the mucous membrane recovers its normal qualities and functions. Dr. Dethan concludes that the chlorate of potash, administered under a special form, which would permit the local action to be exercised slowly and certainly, although leaving the medicine to be carried into the stomach in a state of solution with the mixed liquids of the salivary, buccal, and pharyngeal glands, would be the mode of administration which would combine all indications and all opinions. He therefore suggests the use of the remedy in the form of pastiles, so that the patient may have at hand a remedy against the injurious effects of a mercurial treatment which he may be undergoing. The experiments of Dr. Ricord, and the publications of M. A. Fournier, testify incontestably in favour of this successful simultaneous medication. In certain forms of angina attended with fibrinous exudations, it prevents the intimate adherence of the false membranes to the mucous membrane, and facilitates their expulsion, and assists the action of emetics. In this affection the topical action of the chlorate, favoured by the bruising between the teeth, the natural solution in the liquids of the mouth, and its penetration into all the points interested, will be certainly efficacious. In debilitating diseases, such as diphtheritis, and gangrene of the mouth, the child will find an agreeable and reparative kind of food, together with the most appropriate remedy hitherto discovered, against these diseases.—*B. and F. Med.-Chirurg. Rev.*, Jan. 1858, from *L'Union Méd.*, June 4, 1851.

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35. *Movable Kidneys.*—"The knowledge," says Prof. OPPOLZER (*Wien Wochenschrift*, No. 43, 1856, and *Med. Times and Gaz.*, No. 362), "of the possibility of the existence of this affection is of importance to the practitioner, as, when unaware of it, he may suppose the appearances observed to result from various other causes, and submit the patient to an injurious course of treatment, or it may give rise to unnecessary alarm upon his part. The abnormal movability usually affects but one kidney, and especially the right one; but the author has met with cases in which it was observable in both, and that in a remarkable degree. In all the cases he had the opportunity of examining, the patients dying of some other disease, the kidneys were found healthy; but in these cases there has been observable a deficiency in the cushion of fat, or an extension of the renal vessels. In some cases, the practitioner's attention has been drawn to the abnormality by the patient observing a tumour on one or both sides of the abdomen, which only became perceptible while standing, or lying on one or the other side, disappearing again during the horizontal posture. Generally speaking, however, it is first discovered by careful exploration, when, beneath the relaxed, painless, and not very thick abdominal parietes, a largeish, rounded tumour is perceived, deep under the liver or stomach. The inner concave side can only be felt in very thin persons, and the upper end is only accessible in some. The tumour can be easily pushed upwards, and then may suddenly disappear; but it cannot be pressed against the spinal column, or downwards below the *crista ilii*, without great pain being produced. To very firm pressure, made in any direction, the tumour is sensible; and the patient spontaneously complains of a sense of pressure and dragging, especially when standing, performing active movements, during defecation, &c. In the cases seen by the author, the condition has been normal."

The affection is usually congenital, as is shown by the lengthened condition of the vessels. Rapid emaciation occurring in persons formerly fat, concussion of the body, as in rough travelling, constipation, &c., may probably contribute to its production. In fat persons the diagnosis may be impossible, but it is not difficult in those who are thin, as the form of the swelling can be traced, while the tumour can be pushed into the lumbar region, and there felt. The pain which it not unfrequently gives rise to, cannot be mistaken for neuralgia, colic, or rheumatism, if the practitioner will only make an exact exploration; while the tumour, resulting from a collection of feces, assumes another form, and does not appear in, or disappear from, the lumbar region, in consequence of pressure. It may also be distinguished from a movable spleen, as the latter lies in front of the intestines, under the parietes, and gives rise to dulness on percussion. It can only be confounded with cancerous and tubercular masses, when these are movable, and resemble the kidney in form. Treatment of this affection by bandages and the like, is of no avail; and the removal of it, when present, must be chiefly sought from the horizontal posture. Confinement of the bowels, and the consequent straining, must be avoided. It is, however, of great importance to tranquillize the mind of the patient as to the nature of the affection, and to prevent injurious measures being adopted: and hence the value of a correct diagnosis.

Mr. ADAMS was requested many years ago to examine the body of an old lady who was said to have "slipped her kidney." The right organ could be readily felt beneath the integuments in the lumbar region, and above the crest of the ilium. The only peculiarity revealed by a *post-mortem* examination was that the right kidney appeared to be bound down more loosely than usual. The patient, from having been very corpulent, had been much reduced in size. The condition of the kidney had nothing to do with the cause of death.

Dr. W. F. WADE states (*Midland Quart. Journ. Med. Sci.*, Jan. 1858), that he has had under his care, during the past year, a female patient, whose right kidney is the subject of this curious abnormality. The symptoms and history of the case entirely confirm Professor Oppolzer's remarks.

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36. *Functional Paralysis.*—Dr. HANDFIELD JONES mentioned to the Harveian Society, of London (Jan. 21, 1858), the particulars of two cases of what he would be disposed to call "functional paralysis." The first was that of a girl, aged 19, who, having been unwell for three weeks, was suddenly seized with paralysis of the extremities, loss of consciousness, etc., which only lasted, however, a short time, and from which she recovered, and was convalescent in three weeks. The second, that of a boy, aged 17, affected with slight sickness, impaired memory, and inability to hold objects in the hand for any time together. In both cases, tonics were successfully administered; in the first case, cod-liver oil and strychnia, and in the second, a preparation of iron. Dr. Jones considered that in cases of this kind, the paralytic condition depended on an impaired or weakened state of the nervous centres, for which tonics were the appropriate remedies.—*Med. Times and Gaz.*, Feb. 13, 1858.

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37. *The Doctrine of Elimination, as propounded by recent Authors.*—Dr. THOMAS INMAN has published (*Liverpool Medico-Chirurgical Journal*, July, 1857), a very interesting paper on this subject, in which he inquires: 1st. What the doctrine of elimination is. 2d. The arguments in its favour. 3d. The plan of treatment it leads to. And he endeavours to show—

"1. That the processes by which poisons are expelled from the body are passive, rather than active.

"2. That evacuations, emanations, or eliminations, are not to be considered as 'salutary efforts of nature to cure,' but as symptoms of the normal nutrition being modified by a new force.

"3. That it is dangerous in diseases of a humoral origin, to act upon an eliminant plan of treatment principally.

"4. That the mode of treating diseases, depending on the presence of poison, is to enable the system in general, or any organ in particular, to resist its action, or tolerate its presence.

"5. That anything which depresses the vital powers, makes an individual more susceptible of foreign influences.

"It is not simply a pure condition of the blood that is necessary to health;

for a man may have the most healthy blood possible, and yet die of cold; while those whose blood is vitiated by tuberculosis, cancer, the paludal or gouty poison, may appear to enjoy perfect health, for a lengthened period, if not for the ordinary duration of life. No medicine, therefore, whose sole aim is to purify the blood, and no plan of treatment simply eliminative, can be expected to have more than temporary, or accidental success.

"There is, however, one plan for the elimination of all poisons, with which we feel bound to concur. It is that which places the patient in the midst of pure air and lovely scenery; which takes him from the turmoil and wearing activity of business, and gives him mental repose; which supplies him with nutritious diet, and abundance of the finest water; which procures sound rest at night, without any other opiate than healthful exercise; and which does not scour out the bowels by a daily purge.

"In this way, we believe, health may be regained, and poison be expelled; for there is in every living being a necessity for a constant renovation; old materials are daily being replaced by new; and when the increments are all healthy, and all old materials are being expelled, it is a necessary consequence that the body should have as sound a constitution as it is possible to attain."

## SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

38. *After-Treatment of Surgical Operations.*—Dr. Broadbent, in a paper read before the Liverpool Medical Society, session 1855–56, referred to the object sought—that of union by the first intention. He believed one most common obstacle to this union to be the occurrence of hemorrhage, one or two hours after the operation; not to such an extent as to require the removal of the dressings, but sufficiently to form a coagulum of such a size as to seriously interfere with the union of the wound—acting, in fact, as a foreign body. The cause of this appeared to be, that in amputations, &c., when the surfaces were brought together immediately after the completion of the operation, the vessels were tied while the patient was still suffering from the shock of the operation, or it might be, was somewhat depressed by the after-effect of chloroform, whilst the more minute vessels were prevented from oozing, by their exposure to the air, and that when reaction took place, the hemorrhage came on. The author thought that those cases in which this occurred to such an extent as to necessitate the reopening of the wound, usually terminate more favourably than others. He therefore advocated the plan of postponing the dressing until all oozing had ceased, and the cut surfaces had glazed over. The unnecessary removal of dressings, he believed to be another frequent cause of non-union. He thought that the sutures having been removed, the bandages, &c., should remain untouched till the third or fourth day, and should then be carefully cut off. The inability of the patient to maintain the required position, acted in the same way, and to obviate this, it was suggested that the patient should, before the operation, be habituated to the position in which he would have to lie after it. In the maintenance of the position of the parts, by means of pressure, the author believed that small air-cushions might be advantageously used, instead of pads of lint. —*Liverpool Medico-Chirurgical Journal*, July, 1857.

39. *Causes of the Pneumonia which supervenes upon Laryngotomy.* By Prof. Schuh.—All surgeons of experience are aware that pneumonia is sometimes observed after the performance of laryngotomy or tracheotomy; but observers are by no means agreed upon the causes of this. Most persons, however, seem of opinion that the operation itself does not bear any direct causal relation to this occurrence. Professor Schuh entirely differs from them, and the performance of a very large number of operations upon the air-passages, during his twenty-three years' attendance at the Vienna Hospital, enables him to speak

with authority upon the subject. Although a great advocate for these operations under a variety of circumstances, he is convinced that the altered position and amount of the column of air that is admitted into the lungs is not unfrequently the sole cause of the supervening pneumonia. The following are the grounds for this opinion:—

1. The air, after the operation, enters the lungs by a shorter passage, and by one that is straight in place of being curved, as before; and it does not pass through an aperture which is alternately widened and contracted, as is the case with the *rima glottidis.* The column of air, too, which passes through the canula is larger than that which traverses the glottis, for if a smaller canula were employed, it would be liable to dangerous obstruction. We have thus two important changes in the mechanical conditions of respiration; and the lung becomes exposed to the pressure and impulse of a larger column of air, arriving more rapidly by a shorter passage. This, so tender and vascular an organ will not always support, and inflammation may be easily excited, just as it may when, in the operation of paracentesis thoracis, the fluid is too rapidly drawn off, and the lung is too suddenly exposed to the pressure of the air. 2. Experience confirms what *à priori* might have been expected. Any one who has very frequently performed the operation, must have met with cases in which the patient has complained of the admission of too large a quantity of air, and has only felt at ease when the opening of the canula has been diminished a third or a half by sticking-plaster. If such an indication of an intelligent and observant patient be neglected, pneumonia will follow. 3. The author has lost several patients in whom, at the time of its performance, no signs of pneumonia could be detected, and who seemed to be going on very well to the tenth or even twenty-first day. Not only did no other cause for the development of the pneumonia exist, but this was also always found on the right side—this being on account of the greater width and shortness of the right bronchus more exposed to the impulse of the air. The disease does not come on actively, but is indicated by some acceleration of respiration and slight fever. Physical examination, however, shows that very considerable infiltration has taken place; and the neglecting to institute this may be a cause that many pneumonias have been overlooked. 4. Cases of cut-throat, in which the larynx is wholly or partially divided, also strikingly exhibit the danger of an opening into the air-passages, such patients not unfrequently perishing in a few days of pneumonia, this always commencing on the right side, and in even fatal cases being usually confined to that side. It may also spring up in smaller wounds of this part, if these be not kept carefully closed either by sutures or suitable dressings and bandages.

To the question, whether pneumonia after laryngotomy can be prevented, the answer is, that it can in many cases, but not in all. For this purpose no wider canula should be employed than is necessary to maintain uninterrupted respiration; and as soon as the patient can breathe freely enough through the mouth, and can both breathe and speak when its orifice is closed, it should be changed for a smaller one, or its opening should be partly closed by plaster. When the breathing continues perfectly easy, the canula being stopped, before this is entirely removed it should be allowed to remain in, completely stopped, during twenty-four hours, care being taken that it should not project inwardly, so as to narrow the normal passage for the air. The temperature of the room should never be allowed to sink below 66° Fahr.

It is often exceedingly difficult to determine the time when the canula should be finally removed. After such removal, the patient may continue to breathe quite easy for from two to eight days, when the difficulty gradually returns, until it becomes as bad as ever. If even a couple of days have passed, the reintroduction of the canula can seldom be accomplished, and then only by first passing through the canula a conical obturator, which can better overcome the elasticity of the edges of the cartilage. The longer the canula has remained prior to removal, the more readily may it be re-introduced. The recurrence of dyspnœa is especially to be apprehended when we have reason to suspect ulcer of or around the rima, open abscesses, and sinuses beneath the mucous membrane. Tumefaction rapidly diminishes, and the normal permeability is soon re-established; but on the admission of the stream of air to the diseased part by the withdrawal of the canula, the former difficulties may soon be reproduced. Hence, when the diagnosis can be established, the canula in such cases should be retained during several weeks, in order to give the surfaces time for healing. According to Professor Schuh's experience, pneumonia never comes on after the first twenty-one days are passed, and the canula may then be worn for months or years without injury. On the other hand, the Professor has lost cases by removing the canula too late, pneumonia unexpectedly appearing. The sensibility of the lung to the unusual arrival of air, is especially great when the difficulty of breathing that has given rise to the operation has been of long duration, and the organ has become enfeebled by venous congestion and a diminution of the contractile power of its cells. In a case in which Professor Schuh performed laryngotomy in order to facilitate the removal of a large pharyngeal polypus, the patient who had suffered for months from a difficulty of breathing, was quite well on the day of the operation. The canula having, however, been left in during twenty-four hours, pneumonia was detected by auscultation within this period.

Thus, it results from what has been said, that pneumonia is sometimes a consequence of breathing through an artificial opening; and by due regulation of the size of the volume of air, the temperature of the room, and the timely removal of the canula, it may usually be prevented. This, however, is not always the case, for the condition of the patient may require a long retention of the canula, the lung may be excessively sensible to the changed mechanism, and art has as yet furnished no apparatus as a substitute for the alternated dilatation and contraction of the glottis.—*B. and F. Med.-Chirurg. Rev.*, Jan., 1858, from *Wien Wochensch.*, 1857, No. 20.

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40. *Process of Repair in Subcutaneous Diversion of the Tendo-Achillis.*—Mr. Holmes Coote states (*Med. Times and Gaz.*, Jan. 9, 1858) that he has had an opportunity of examining two specimens of subcutaneously divided tendo-Achillis taken from the same subject, the one operated on three months, the other rather less than two months before the death of the patient, which resulted from pneumonia.

"The right tendo-Achillis was adherent to its sheath.

It presented the usual pearly white colour. The surrounding vessels, especially the veins, were full and tortuous. The external fibrous investment was complete and of usual appearance; but between the two extremities of the tendon there was a compressed portion two inches in length, the transverse measure of which, as compared to the obviously normal part, was as two-eighths to three-eighths of an inch. A longitudinal incision through the tendon showed an interval of just two inches between the divided ends of the normal tendo-Achillis, which were united by a light gray semi-transparent structure, through which were traced well-formed opaque pearly white fibres, passing from one extremity to the other of the cut tendon. The new tissue was clearly defined from the old, being of a totally different colour, the opaque white hue of the normal structure standing out in strongly marked relief. After drying for a short time the new tissue acquired a rosy tint, obviously due to the blood contained in numerous capillaries.

The interval between the cut extremities of the left tendon did not exceed one and a half inch. The transverse measurement was the same as in the preceding specimen; but along the sheath there were numerous patches of extravasated blood. The opaque white fibres of the original tendon were separated in parts at their junction with the newly formed tissue, which appeared in the interspaces, and were dove-tailed. Towards the lower end of the connecting medium, near its junction with the calcaneal portion of the tendo-Achillis, there was an oval cyst half an inch in length, containing dark fluid blood.

The examination of the newly formed tissue under the microscope exhibited some points of interest. It contained a large proportion of oil globules intimately mingled with the firmer and more fibrous material. The latter consisted of granular matter and of newly formed fibres of ill-defined contour, yet exhibiting, in many situations, the appearance of being formed of elongated nuclei, for, at the broken edge of the specimen, numerous loose nuclei were seen floating about free, or united in linear series of three or more. There were some whiter and more opaque parts among the newly formed tissues; these closely resembled, but did not quite equal in clearness or in contour, the normal white fibrous tissue of histologists.

The specimens here described are interesting as contrasted with others of equal value presented by Mr. Tamplin to the museum of the Royal College of Surgeons. These were the tendo-Achillis and the tendons of the tibialis posticus and anticus muscles of a child nine months old, in whom, at the age of five months, these tendons had been divided for congenital varus. The child had perfect use of its feet before death, and when it died, no trace of an operation could be detected even by microscopical examination.

The question here suggests itself—Does the absence of abnormal appearances in the tendons of the infant arise from the gradual conversion of the connecting medium into white fibrous tissue? or does the connecting tissue contract so as ultimately to approximate the ends of the divided tendon and form a "linear cicatrix?"

I must confess that in the specimens before me there is the very faintest approximation of normal appearances in the connecting tissue. The divided ends of the tendo-Achillis seem imbedded in a soft pulpy mass of quite different consistence and colour. The absorption of the oily and soft material would have reduced this structure to at least one-third its present bulk, and it would have acquired the appearance of a narrow cord. I am not, therefore, prepared to acknowledge that the newly formed tissue gradually acquires so much of the properties and of the external characters of tendon as to be with difficulty distinguishable. On the contrary, it would rather seem that a slow process of approximation is effected between the cut ends, and that this is combined with an altered sphere of muscular action.

It may be urged in opposition to this view, that the interval between the cut extremities of the first divided, and consequently more completely repaired tendon, was longer than that of the opposite. It must be remembered, however, that no great length of time had elapsed since the operation—scarcely three months—and that, in all probability, twelve months would be required for the completion of all the processes of repair in an adult.

The cyst of blood at the lower extremity of the connecting tissue in the left leg, due to some slight excess of the extending force, shows the necessity of proceeding with care in the readjustment of the distorted parts. One of the principal laws in the practice of orthopædic surgery is to proceed slowly, that tissues may yield and not tear. The specimens here quoted illustrate the importance of the remark.

I should conclude that, when specimens are examined in which no trace of the division of the tendon can be found, the divided ends have become approximated so as to constitute a close linear cicatrix. But that when the connecting tissue has been elongated it always preserves some of its distinctive characters, either as regards its bulk or its minute structure. 'I am of opinion,' observes Mr. Tamplin, in his work on *Deformities*, 'that the new substance will and does admit of sufficient extension to compensate for the greatest amount of shortening met with in any deformity; for I have repeatedly, in cases of talipes equinus, found the new connecting medium full two inches in length within three or four weeks following the operation, especially in those cases where there is no resistance in the joint, and where the foot admits of being rapidly brought into its normal position.'"

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41. *Suppuration of Strumous Glands.*—Mr. James Paget states (*Med. Times and Gaz.*, Jan. 2d, 1858), that the greater number of strumous children, with slowly suppurating cervical and other lymphatic glands, supply evidence enough that the best plan in all such cases is to leave the suppuration to increase till the skin over it is so thin, that one might think that in a day or two spontaneous ulceration would ensue. The thinnest part of the skin should then be punctured with a small knife, so as to make an opening not more than two lines in length. Through this opening the pus should be allowed to flow out slowly:

the abscess-walls should on no account be pressed. If the pus will flow in mere drops, it is well; if it stop altogether, no harm will follow. No more should be done than to cover the abscess with a soft poultice or with warm water-dressing, which should be removed twice or three times a day. The abscess thus treated will slowly empty itself, as the inflamed and stretched skin slowly recovers its elasticity and contractile power; or if the little wound should heal before the emptying, it will in a day or two reopen; or, at the most, the puncture may need to be repeated. The advantage of the plan is, that the punctured skin does not ulcerate or slough, the abscess-wall does not inflame, and recovery ensues without disturbance of the general health, and with a scarcely visible scar. In the great number of cases that I have thus treated, I do not remember to have failed to obtain these advantages. Usually, the healing of the abscess is completed within three weeks, in strong contrast, as to both time and manner, with the tedious healing and ugly scarring that often ensue when these abscesses are left to open spontaneously, or are opened widely with the knife or caustic.

The internal treatment which I have always employed in these cases when suppuration has taken place (and which, if any, will prevent its occurrence), is the giving of tonics, or iron, and good food. The medicines for children may be, according to the case, from two to five grains of the potassio-tartrate of iron, or from five to ten grains of the liquor cinchonæ, or a drachm of the cod-liver oil, three times a day. The first I think best in ordinary cases, in which the characters of struma are well marked, and not complicated; the second appears best when with struma there is marked debility, drooping, deadly pallor, duskiness; and I think it is a very good plan to give the bark with lime-water; the third seems fittest when great emaciation exists. In all cases it appears useful to give occasional small doses of the hydrargyrum cum cretâ, with rhubarb or the sesquioxide of iron. I doubt whether iodine does good in any of these cases, unless in combination with iron.

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42. *Strumous Inguinal Glands.*—Among the affections often wrongly classed with the syphilitic, is, according to Mr. James Paget, a form of suppuration in the inguinal glands, which is apt to occur in those that are enfeebled and of strumous constitution. The confusion of it with syphilis is probably due to its often occurring after gonorrhœa; but it is often seen with no such connection, and when it does follow gonorrhœa, it is often so late after the cessation of the discharge, that we can only ascribe its occurrence to the general debility which gonorrhœa is apt to produce in weakly persons.

The disease may affect the glands both above and below the crural arch, or either of these sets separately; and the feature which most certainly distinguishes it from syphilitic glandular disease is, that the inflammation, which leads slowly to suppuration, appears to involve separately each gland, with its immediate investments. The glands are not collected, as in one inflamed mass; neither is there much external swelling, or much inflammation around the proper substance of the glands; but they lie separately swollen, and commonly the skin over each, though scarcely, if at all, elevated, appears as a separate small red patch. When suppuration ensues, each gland suppurates and opens separately, or with subcutaneous narrow tracks of communication with the rest. Thus, late in the disease, we may see one or both groins, with two, three, or more openings, leading to as many suppurating cavities or tracks extending under comparatively healthy skin.

In all the characters just described, this disease of the inguinal glands bears the admitted marks of usual, but not constant, distinction between syphilitic and strumous inflammation; of the former as leading to suppuration about the glands, the latter to suppuration in them. And, in correspondence with this, the usual characters of strumous inflammations are noticeable; such as the pale rosy redness of the inflamed integuments, the thinness of the pus, the general tardiness of both the suppurating and healing process.

The best treatment appears to be, when suppuration has not yet ensued, the giving of iodide of iron, in doses of about a drachm of the syrup thrice daily, with occasional aperients, good food, and the constant application of warmth.

If the glands have suppurated, each, when the skin is thin or feels undermined, should be punctured with a small knife; and the pus may be allowed to flow out slowly without pressure. The general treatment after puncture may be the same as before; and if the abscess-cavities appear very tardy in healing, lotions of nitrate of silver should be dropped into them, or if there be sinuses they should be injected with solution of iodine. Complete rest is not necessary; the general advantage of moderate exercise in the open air is greater than the injury done by moderate movements of the groins.

I know no disease in which the iodide of iron does so much good as in this; and it appears better than any other preparation of either iodine or iron, and better than bark in any form.—*Med. Times and Gaz.*, Jan. 2, 1858.

43. *Cancerous Lymphatic Glands.*—Few diseases, says Mr. James Paget (*Med. Times and Gaz.*, Jan. 2, 1858), are so insidious in their early progress as primary cancer in the cervical lymphatic glands. Beginning like an ordinary hypertrophy or chronic inflammation of the glands, it may advance far without exciting much, if any, suspicion of its terrible nature. Then, as the swelling increases, and, if increasing rapidly, becomes softer at its most prominent part and covered with florid skin, the imitation of suppuration may be so close as to deceive the most practised touch. Puncture by mistake may now discover what is going on; but in some cases, it may only prolong the oversight; for suppuration may have taken place in the substance of a cancerous gland. I have even seen repeated collections of pus in a cluster of cancerous glands, emptied by repeated punctures, prolonging the belief that no cancerous disease existed, though other signs of its presence seemed distinct.

I cannot tell how this error of diagnosis may be always avoided; but the following may be useful helps. In patients of middle or older age, all enlargements of cervical glands, that are not evidently inflammatory or sympathetic, should excite some suspicion of cancer. The suspicion should be the greater the older the patient is. It must be increased, if the glands affected are under the upper part of the mastoid muscle, and still more if they are under the middle of the muscle. It is a bad sign when they form a close compact cluster, or when, after puncture, the swelling does not at all subside; and equally bad when the swelling, as it increases, becomes less movable. The harder the glands are at first, the more they must be feared; and the probability of cancer is greatly increased if the patient loses weight and strength, or is a member of a family in which cancer has occurred.

The difficulty of diagnosis which is here referred to occurs most commonly in cases of primary cancer of the glands; but it may occur also in those of secondary cancer; for the disease in the glands may so predominate over the primary disease in the tongue, mouth, or jaws, that of this the patient may know little and say nothing. All these parts therefore should, in every case, be carefully looked to.

44. *On Congelations.*—M. Valette having had abundant opportunity during the late war of studying this subject upon crowds of French soldiers in the hospitals at Constantinople, suffering from congelation of the hands and feet, has contributed an interesting paper respecting it to the valuable *Journal of Military Medicine* published by the French Army Medical Department. The following are his principal conclusions:—

1. A moderate degree of cold is sufficient to give rise to the more or less serious effects of local congelation, when it is aided by numerous causes of general debility. 2. These effects may be divided into five different degrees. i. The sensibility and motility of the parts are chiefly affected; but the effects are usually dissipated within twenty days. ii. The formation of phlyctænæ. iii. Ulceration of the superficial layers of the dermis. iv. Mortification of the skin and subjacent cellular tissue. v. Sphacelus of a more or less considerable portion of a limb. 3. This last form sometimes affects the whole of both feet simultaneously, coming on insidiously with the symptoms of the first degree. A brownish depression suddenly encircling the lower end of each leg, opposite the base of the malleoli, is the sign of its invasion. 4. The fourth and fifth

degrees have never been observed as the result of a too sudden return of the circulation and warmth in the parts affected, the gangrene always supervening upon the gradual extinction of vitality unattended by any local reaction. 5. The progress of these congelations was rendered remarkable by the slowness with which the functions of the parts became re-established in the two first degrees; and the great delay attending the process of cicatrization in the three last. 6. The chief fatal internal complications were diarrhœa, tetanus, and typhus. 7. Independently of complications, the congelations never gave rise to the phenomena of general reaction; but in some patients, on the elimination of an important part—*e. g.*, both feet—the febrile action took on the form of quotidian intermittent. 8. It was not in general possible to determine during the first days with what degree of congelation the part was smitten. 9. In all cases prognosis should be very reserved. Still, setting internal complications aside, it may be said to be favourable in the first three degrees, and unfavourable in the last two. It is more favourable when the hands than when the feet are affected, and it is highly unfavourable when diarrhœa of more than two months' date, pseudo-membranous bronchitis, adynamic pneumonia, dropsy, or tetanus is present. 10. The prophylaxis should consist in the frequent change of tents, the addition of preserved vegetables to the rations, the frequent distribution of small quantities of alcoholic drinks, and in the anointing the feet with some fatty body, as tallow, that may be spread into a thick layer. 11. General treatment exerts great influence on the progress of local congelations, and should be directed in regard to the prevailing anæmia and debility. 12. The local treatment of the first degree should consist in the application of lotions containing laudanum, conjoining with these, if œdema is present, frictions, with tincture of digitalis and camphorated spirits. The parts should afterwards be carefully wrapped in flannel or wadding. In the second degree, the epidermis should be carefully preserved after evacuating the serosity. In the third degree, the pain and itching of the ulcers should be allayed by fermentation with infusion of elder containing laudanum and extract of lead, while the process of cicatrization should be hastened by caustics. In the fourth degree the danger did not consist in too active local reaction, as observed in men in the full plenitude of vital power at the time of congelation, but in a gradual, insensible extinction of life in the parts affected. Stimulant frictions are at once indicated, and if eschars still form, they should be removed as soon as possible, by carrying the knife along the limit separating the dead from the living parts. In the fifth degree, elimination should be encouraged by stimulating fomentations; and when the ulcerative furrow has sufficiently separated the dead from the living parts, any ligaments, tendons, or bones which impede complete separation, should be divided level with the living parts—an operation perfectly harmless, and much abridging the progress of the case. [The harmlessness and propriety of this interference, we may observe, is denied by M. Baudens and other Crimean observers.] 13. It results from the observations made in Africa, and the experience gained in the Crimea, that, as a general rule, amputations should be abstained from in cases of congelation, leaving these to the reparative powers of nature, at the same time aiding by general and local means the elimination of the dead parts. To this general rule, however, the following cases are exceptions: I. When trismus occurs in a subject too debilitated to admit of bloodletting, the patient will die in twenty-four or thirty-six hours unless amputation is speedily performed. II. When a congelation of the fourth degree is complicated by diarrhœa, which resists treatment, amputation must be performed, in order to render the economy susceptible of the influence of therapeutical agents. III. When sphacelus of both feet is announced by the appearance of the brownish circle at the lower extremity of each leg, amputation must be performed, or the patient will sink under an exhausting diarrhœa. When internal complications do not prevent it, the interval of a week may elapse between the two operations. 14. In the choice of the spot for the performance of the operation, for the sake of securing a more rapid cure, we should select this as far distant as possible from the seat of congelation, short of endangering the patient's life by a too near approach to the trunk. 15. When resection of one or more bones is indicated, it is of great importance, in order to shield the patient from the effects of purulent absorption, that we should confine our interference to the limit between the dead and living parts, without implicating the latter.—*B. and F. Med.-Chirurg. Rev.*, Jan., 1858.

45. *A Mixture of Collodion and Castor Oil as an Application to Severe Cases of Burns and Scalds.*—A mixture of two parts of collodion and one part of castor oil has been extensively used at King's College Hospital, and is said to possess many advantages over other applications. It is painted over the entire surface of the burn, so as to afford a coating to the parts which entirely excludes the atmosphere without obscuring the surface of the sore from view. It is said to have the effect of immediately lessening the pain; and that in all the cases in which it has been applied, the sloughs which have subsequently formed have appeared to be much less deep than usual. These cases are recorded in the *British Medical Journal* (Dec. 26th, 1857), in which this application was used with the most satisfactory results.

46. *Employment of Collodion in Orchitis.*—Having treated 64 cases of gonorrhœal orchitis in the Maggiore Hospital, Milan, solely by means of collodion, Dr. LOSSETTI comes to the following conclusions: 1. Orchitis, epididymitis, or inflammation of the spermatic cord, even when intense, arising from blennorrhagia, yields much more readily to the application of collodion than to the ordinary antiphlogistic treatment, actively employed. 2. The most efficacious means of obtaining certain and rapid recovery is the application of the collodion (the author prefers to pure collodion a mixture of one part of castor oil and twenty-four parts of collodion) twice a day until the cure is completed, applying it oftener, however, in cases of extreme gravity. 3. Under the use of the collodion, the indurations and enlargements which remain after the relief of the inflammatory action will be dispersed without the aid of any other means. 4. By means of its application, the erysipelas of the scrotum that sometimes complicates the orchitis becomes resolved, and the cellular infiltration that almost always accompanies or succeeds it disappears. 5. The treatment required besides only consists in the observance of a low diet, rest, and cooling drinks. 6. This mode of treatment is more economical than the antiphlogistic mode, by reason of the shorter time it requires (according to the author's cases, eight days as compared to fourteen by the ordinary treatment), and the saving of expensive remedies, as leeches, etc. 7. The treatment is also to be preferred, since the digestive organs are not disturbed by active purgation, and the general powers are not enfeebled by this and the abstraction of blood. 8. The sensation of burning produced by the application of the collodion never amounts to the extent of acting as a contra-indication. It becomes violent, and even insupportable, only when some minute lesions of continuity of the skin of the scrotum are present; and these only require to be protected by cerate or court plaster, to enable the patient to bear the application.—*Med. Times and Gaz.*, Jan. 16, 1858, from *Omodei Annali Univ.*, vol. clix.

47. *Large Doses of Disulphate of Quinine in Dysuria and Retention.*—Dr. SERRES, of Dax (France), quotes eleven cases of his own practice where he succeeded in removing the dysuria, or conquered the retention, by giving disulphate of quinine in doses varying from eight to ten grains every half hour. In retention, urine began to flow after the second or third dose, and no instrument was used in the cases mentioned. It would also appear that the quinine did not produce any unpleasant symptoms. How does the alkaloid act in these instances? Probably by allaying spasm. One case is recorded where several strictures had existed for a long time, and the quinine was, nevertheless, successfully administered.—*Lancet*, Jan. 23, 1858.

48. *Thoracic Aneurism successfully treated.*—Mr. TUFNELL related the following example of this to the Surgical Society of Ireland (Dec. 12, 1857). Samuel Parkes, æt. 54, a die cutter and seal engraver, a delicate looking man (and exhibiting considerable cardiac distress), was admitted into the City of

Dublin Hospital on the 18th of September, 1854, with thoracic aneurism. He stated that he had always been temperate and steady, but had worked very hard at his trade, that of die cutting in steel. For some time back, he had felt heaviness in his chest, but had not noticed anything particular until about five weeks prior to admission, when one night, on taking a pill for constipation, it passed into the trachea. He was seized with intense coughing, which lasted for an hour, and was exhausted by its severity. Two days subsequently he experienced severe pain in the right breast, and the next day a tumour appeared elevated above the surrounding skin, which had gradually increased up to admission.

At this time, the tumour was three inches in diameter, elevated in its centre nearly two-thirds of an inch, with considerable pulsating action, the integument over it being apparently not thicker than three or four lines. The integument itself was not discoloured. The tumour presented to the right side of the sternum, in the situation of the third and fourth ribs, which, together with a portion of the sternum, had been absorbed. There was a double pulsation sound, but no murmur. The pulse was 88, full and regular, and equal at either wrist. The patient's general health seemed good, and he complained only of the pain in the tumour, which he said was excessive. He had continued to work at his trade until obliged to relinquish it in consequence of the severity of the pain.

The aneurism evidently sprung from the anterior aspect of the right side of the ascending portion of the arch of the aorta, and was progressing rapidly to the surface, absorbing all before it. It must have existed for some time unperceived by the patient, and its appearance on the coughing fit shortly before must have depended upon previous removal of the bony and cartilaginous structures intervening between it and the integument.

Regarding the case as one suited for Dr. Bellingham's plan of treatment upon restricted diet and rest, I spoke to the patient, and asked him if he would aid in carrying it out, and confine himself rigidly to the diet and regimen prescribed. I explained to him the critical condition in which he was placed, and his almost certain progress to speedy death, unless the absorbent action then going on could be arrested, and the sac so lined with fibrin from within as to prevent further distension of it. He consented readily, and, I believe, *strictly* kept his word, and took no food or drink whatever during the period of his stay in hospital other than that which he was allowed.

I ordered him to have an excellent well made bed, with two hair mattresses, and plenty of pillows for props, and once recumbent, not to rise for any purpose whatever, a urinal receiving the vesical, and a bedpan the alvine discharges. I desired him to speak as little as possible, and furnished him with plenty of books. His diet was confined to two ounces of white bread and butter for breakfast, with two ounces of good new milk; two ounces of white bread and two ounces of broiled mutton for dinner, with two ounces of milk; and two ounces of white bread and butter, with two ounces of milk, for supper; thus making the total of the solid food to amount to only eight ounces, and of the fluid food to six ounces, in the twenty-four hours. Ice was applied in a bladder at intervals over the tumour. This treatment was commenced upon the 19th of September, and continued steadily until the middle of November. Its effect was as follows: At first, he felt the loss of food, and used to look anxiously at the other patients' meals, but being a sensible man, he restrained his appetite. He suffered more from thirst than from hunger, and complained a good deal of dryness of the throat and fauces at night, which, however, was somewhat relieved by keeping a small pebble in his mouth.

He daily complained less and less of these annoyances, and by the 25th September was progressing rapidly, the pulse being reduced to 70, and soft; the pulsation and pain of the tumour greatly diminished. An untoward circumstance now occurred which threw him back. A case of delirium tremens was admitted into the ward, and the violence of this patient caused him agitation and alarm. When visited on the morning of the 26th, the heart's action was found to be tumultuous and impetuous, and the whole system much disturbed. He was ordered a little port wine and opium, and by degrees confidence and calmness of mind were restored. By the 28th, he had regained his previous condition; the pulse was full, but very compressible, and beat steadily at 70 in the minute. The tumour seemed flatter, and was described by the patient "as feeling condensed into a smaller space." The ice had been discontinued for some days, and a thin piece of linen rag, moistened with water only, kept as an evaporating medium to the surface. The double thump had already disappeared in the tumour, and a single beat only could be felt, corresponding to the natural sound of the heart, but slightly louder. The patient had ceased to complain of hunger or thirst.

Upon the 2d of October, the pulse had fallen to 62. He could now lie flat upon his back for two hours at a time without experiencing any uneasiness; after this, however, uneasiness was felt, and unless his position was shifted to the side, cardiac agitation was experienced. I mention these particulars, for, though apparently trifling in themselves, upon attention to them must depend much of the likelihood of success in treatment, *where all is dependent on quietude of circulation* and rest. The tumour now gradually became more and more firm to the feel, and flattened and declined. Towards the middle of November, his general health was excellent, and his weight had but very little reduced.

His diet was slightly increased, and on the 13th of December he left the hospital at his own desire, having been able for some time to walk about the wards and up and down stairs without distress. For the latter part of his stay in hospital, he was under the care of my colleague, Professor Hargrave, my period of attendance having expired.

I saw nothing more of this man from that date until a short time since, when he called upon me to request my advice for an irritable ulcer of the leg. I partially recognized him, but not entirely, and on asking if I had not seen him before, he replied, "Oh, yes, sir; you cured me of an aneurism; but it is not about that that I am come, it never troubles me now." I looked at the ulcer of the leg, but felt more anxiety to ascertain the condition of the contents of the chest and the changes which had taken place. I should, however, premise by stating the nature of his occupation and proceedings during the intervening three years. Upon being questioned, he said that on leaving the hospital in December, 1854, he had returned home, "feeling able to do something for his family's support;" that in March following, he regularly resumed his trade as a die and steel engraver, and had continued steady at work ever since.

Upon stripping him, the first point that attracted notice was the enlargement and tortuous state of the abdominal and pectoral cutaneous veins, the epigastric, circumflex, and mammary having assumed the condition of large venous trunks. The tumour next arrested attention. It projected to the right side of the sternum, nearly midway between the clavicle and nipple, but inclining to the former, where it presented a bulging prominence the size of a small saucer, occupying the situation of the cartilages of the second and third ribs, making this side contrast strongly with the hollow intercostal spaces and marked ribs upon the left. No pulsation was visible in the tumour, nor made apparent when any testing object (such as a portion of white paper) was placed upon it. To the hand it felt dense, and the cardiac impulse against the interior of the sac was unheeded. The sound on percussion was dull over a very large space around the tumour, whilst to the ear a double sound was given, intermediate in time to the contractions of the heart. Upon deep inspiration of the whole chest, this portion was not expanded. The heart's sounds were audible over a very large portion of the chest, and the pulsation, aneurismal and cardiac, was communicated to the hand or ear for a space of fourteen inches in an oblique line from the right clavicle down to the left hypogastric region.

His general appearance indicated a barrier to the return of venous blood to the right side of the heart. There was some congestion of the face, especially increased upon stooping, with puffiness of the neck and face to a slight degree. There was no interference by pressure upon the trachea, or, at least, to any extent, none upon the œsophagus or the deep nerves of the chest; for stridulous breathing, dysphagia, and aphonia were all wanting, his functions in this respect being very good. He had some cough and expectoration, which caused him a good deal of annoyance, particularly at night. After coughing, he said he occasionally feels pain dart into the tumour, but not at any other time. There was no interference with either the carotid or radial pulses, and of the latter, the circulation was equal on both sides. He stated that he lies at night on the right side to sleep, and cannot rest upon the other, but changes over to it occasionally prior to going to sleep. He said that he had during the past year lost flesh, and is not as strong as he was, but still works regularly at his trade, which is a fatiguing occupation.—*Dublin Hospital Gazette*, Jan. 1, 1858.

49. *Cure of Popliteal Aneurism by Digital Compression of the Vessel corresponding with the Sac.*—M. Vanzetti submitted a short time ago to the Surgical Society of Paris two cases of popliteal aneurism, in which he obtained the consolidation of the contents of the sac, in forty-eight hours in one case, and five hours in the other, by the continuous compression of the femoral artery, by means of the fingers alone. Relays of students were employed in these cases. M. Michaux, a French surgeon, has also presented a similar case to the Society, where a cure was obtained in twenty-four hours. The reporter on these cases, M. Verneuil, took the trouble of collecting all the cases where this treatment has been used, and he found that out of seventeen, only seven were unsuccessful. From a review of these cases, the reporter thinks himself justified in submitting the following propositions to the Society:—

1. Indirect digital compression, either steadily continued or intermittent, and kept up by skilful assistants, or by the patients themselves, has cured aneurisms without the assistance, before or during the treatment, of any other therapeutical measure.

2. Digital compression, associated or alternating with the tourniquet, has also led to rapid cures. Success, when likely to be obtained, is in general rapidly attained.

3. It has cured aneurisms, when mechanical compression was impracticable, or was forcibly given up. It is more easily supported than the latter, as the fingers can exert compression, even when the skin is inflamed.

4. "Digital compression is more efficacious and less painful than any other kind, as the action may be limited to the artery, and does not include the neighbouring nerves and vessels. The skin also is less tried."—(*Broca on Aneurism*, p. 807.)

5. Digital compression may fail to produce a cure; but even then it advantageously modifies the condition of the aneurism.

6. It may be surmised that, alone and unaided by other means, it would have led to a cure, had it been applied more perseveringly and regularly than was done in the cases above alluded to.

7. No accident whatever has to this day attended this mode of treatment.

8. Digital compression was first practised by Saviard, a French surgeon, after an operation for aneurism by the old method; this compression has not been as generally and extensively applied in France as it could be wished.—*Lancet*, Feb. 20, 1858.

50. *Excision of Enlarged Tonsils.*—For chronic enlargement of the tonsils, whether through simple overgrowth or in consequence of chronic inflammation, the excision of the projecting portions, Mr. James Paget states (*Med. Times and Gaz.*, Feb. 6, 1858), seems by far the best treatment. So far as I have seen, the cutting of tonsils is never followed by severe hemorrhage or other serious inconvenience, provided they are not inflamed at the time of being cut. And I believe that if other means of reducing the size of enlarged tonsils be not quickly beneficial, the excision should be adopted both oftener and earlier than it commonly is. One frequently sees cases in which delay in operating has given time for the occurrence of the incurable "chicken-breast" deformity of the chest, which Dr. Warren pointed out as a common result of the habitual hard breathing of children with enlarged tonsils.

The double vulsellum and common probe-pointed bistoury are, I believe, the most advisable instruments for this operation, because, among other reasons, they are equally fit for all cases. There are certainly some cases for which even the most improved guillotines are insufficient instruments; those, namely, in which the enlargement of the tonsil extends so far down by the side of the pharynx, or up towards the soft palate, that a fair portion of the disease cannot be taken within the ring or loop of the guillotine. For these broad-based enlarged tonsils, the knife alone is applicable; and, to remove them effectually, it is advisable to have a facility which will hardly be possessed if the knife be used for them alone, but which the hands accustomed to the cutting of common enlarged tonsils will seldom lack. The general direction for the operation must be to cut from below upwards, the blunted point of the knife being carried well backwards, and its edge just internal to the posterior arch of the palate.

51. *Experience of the Surgeons of the "Dreadnought" as to Pirogoff's Operation at the Ankle-joint.*—The success attending the above operation at the "Dreadnought" has induced Mr. J. Croft, the assistant surgeon, to call the attention of the profession to the following facts:—

Six times the operation has been performed, and in four instances with most perfect success; but in the two remaining death removed the subjects of operation before cure was completed—in the first instance by granular disease of the kidneys, and in the second instance by secondary deposits of pus in various joints.

In two of the six cases in which cure was completed, the operation was performed for the removal of scrofulous disease of the articulations between the tarsal bones; and in the two others the operation was for frost-bite of the anterior part of the feet.

Progress towards health was marked by suppuration along the tendons of the tibialis anticus and posticus and the peroneal tendons in each of the cases, but not by exfoliation of bone. The posterior part of the os calcis was united firmly with the tibia, generally in about three weeks; but in one instance—the last in which the operation was performed—union was good at the end of twelve days.

I may here remark, that although the os calcis may be diseased at and about its articulating surfaces in instances of scrofulous disease of the joints of the tarsus, it is rarely that the posterior part is rendered too unhealthy to be made use of in the formation of a stump.

The advantages of this operation over "Syme's" (the only operation with which it can be compared) are, that it may be performed more rapidly as to time, leaves a more vascular flap, forms a longer stump, and produces a firmer pad for the subject to walk upon.

Less time is occupied in the operation for the somewhat troublesome dissection of the skin of the heel from the os calcis is avoided, and the os calcis sawn through instead.

Greater vascularity of the flap is secured, for the plantar arteries are divided in the hollow of the foot.

The length of the stump is a very important point; it is longer than that in Syme's operation, by the portion of the os calcis left on the flap, which should be quite one inch and a quarter. In the four instances mentioned, the difference in length between the foot operated upon and the sound foot, was never more than three-eighths of an inch.

The mode of operation, as performed by Mr. Busk, Mr. Tudor, and myself, is to grasp the projecting portion of foot with the left hand, then to enter the point of the knife *immediately* behind the malleolus, and make a semicircular incision, in front of the point, terminating at a corresponding point behind the opposite malleolus; next, to carry the incision downwards and slightly forwards to the edge of the sole of the foot, straight across the sole, and terminate it at the opposite malleolus, or the point at which the incision was commenced.

Having disarticulated the foot, the soft parts are to be separated from around the os calcis in a line from the posterior margin of the upper articulating surface to the under edge of the articulating surface of the cuboid, and the mass in front of this line to be removed by the saw.

The ends of the tibia and fibula are sawn off in the way usual in Syme's operation. During the process of separating the soft, or rather tough parts, about the os calcis, care should be taken to keep the edge of the knife close to the bone, in order to avoid wounding the posterior tibial or plantar arteries. The portion of the os calcis left on the flap should be placed in contact with the end of the tibia, and if the saw has been entered well behind the calcaneo-astragaloid articulation, and brought out at the under margin of the calcaneo-cuboid articulation, the contact will be accurate. If the bones cannot be placed in accurate contact, thin slices of bone from the upper and back part of the portion of the os calcis should be removed by the saw until they can be adapted. The saw we prefer is Bigg and Milliken's modification of Butcher's Dublin saw. —*Lancet*, Feb. 6, 1858.

52. *On some Points connected with the Treatment of Obstinate Stricture of the Urethra.*—Mr. Henry Smith read a paper on this subject before the Medical Society of London (Jan. 30th, 1858). He commenced by defining the term obstinate in reference to stricture, and referred to three forms of the disease where this obstinacy obtained. The first was where the main source of distress to the patient and difficulty for the surgeon, existed in the excessive irritability of the urethra, which would not allow of treatment to be carried on satisfactorily by ordinary means. In the second class of cases, the stricture was marked chiefly by its density, and by the peri-urethral condensation of the parts to the perinæum and scrotum, accompanied occasionally with fistulous openings. In addition, also, there might be the extreme irritability associated with the first form of stricture: if so, the surgeon would have to deal with a most difficult case. In the third form of the disease, the author referred to those cases of stricture which were entirely caused by injury to the perinæum, which occurred at the earliest periods of life, and which were especially marked by extreme density of the parts, and rebelled generally against ordinary treatment.

For the treatment of these cases, which in the more severe forms so often baffled the ordinary means employed, the author considered that much more might be done than is at present. In the first kind of case, where the stricture was accompanied by extreme irritability of the parts, great attention must be paid to preparatory measures for some days before local treatment is commenced; entire rest, freedom from all stimuli, careful attention to the various secretions; and when these were improved, the liberal administration of opium were the means administered. When the system had become less irritable dilatation was to be commenced; but when there were, as is often the case, two or more strictures, and those excessively narrow, the treatment by the use of metallic catheters and sounds has to be especially avoided, as much irritation, is caused by them in severe cases; whilst in others the patients will not allow them to be used a second time. Wax bougies, however, when well made and skilfully used, could be employed without producing irritation, and dilatation could be carried on up to a certain point where no other instrument would effect it. The objections urged against the wax bougie as an unreliable instrument were not founded upon good evidence. It was, however, only in the early stage of treatment that Mr. Smith used the wax bougie; for as soon as a fair-sized bougie could be introduced, he went on with the treatment by using metal instruments. When from the excessive irritability of the urethra dilatation could not be proceeded with, the author strongly advocated the use of potassa fusa, as employed by Mr. Wade, applied very lightly, and detailed a case illustrating the benefits of that agent in a great degree.

In the second form of the disease, preparatory treatment was of great avail; but here the peri-urethral thickening should be reduced by applications of leeches from time to time, by continual fomentations and poulticing. Then, instead of forcing a small catheter through the tight obstruction, the author recommended that a fair-sized solid sound or catheter should be passed down to the face of obstruction, and held against it for some time. If these and other measures failed, the potassa fusa was to be applied more freely than in the first kind of cases referred to.

In the third form, where the stricture was traumatic, the surgeon would have great trouble. Fortunately, however, there is little irritability in such cases, and therefore the surgeon might employ his measures somewhat more freely. Retention of the catheter and the potassa fusa are the agents to be relied upon.

The author considered at some length the action and use of potassa fusa, and spoke highly of it as an adjuvant to other treatment, but strongly deprecated its frequent or free employment. He detailed some cases in support of his views, and concluded his paper by some observations on the treatment of obstinate forms of stricture by incisions. He considered cutting as a remedy for stricture as bad in principle, and believed that a cure could not be effected by it more than by any other measures. Cases related by surgeons and in hospital reports hitherto could not be relied on, as the history of the patients was generally only brought down to a few weeks from the operation. Years were necessary before a proper appreciation of cutting could be made. Mr. Smith detailed the particulars of two or three cases, where cutting had been performed years previously, and where the results, at first satisfactory, were ultimately quite the contrary.

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53. *Diagnosis of Hydrocele.*—Prof. Nelaton recently addressed the following observations to his clinical class: In some cases the diagnosis of tumours of the testis presents almost insurmountable difficulties. The slightest circumstances then acquire the highest importance, and it becomes of importance that we should not attribute to any sign a degree of confidence that it does not deserve.

*The Transparency of the Hydrocele.*—In order that this should be effectually exhibited, we should take care that the patient is not exposed in broad daylight. Another point just as indispensable is often neglected. When the surgeon commences his explorations, the sudden impression of cold causes a contraction of the dartos, and however slightly the size of the tumour may allow of its rising towards the ring, to that extent the scrotum becomes relaxed, wrinkled, and increased in thickness. This is one of the impediments to transparency, but there is another of much more importance. This ascending movement, by bringing the tumour nearer the axis of the body, prevents the light from falling perpendicularly on its surface; and the rays which fall under too oblique an incidence do not penetrate the tumour, and consequently cannot exhibit its transparency. It becomes necessary, therefore, to isolate the tumour as much as possible, to, so to speak, enucleate it, by taking hold of it near the ring and pressing it forward, separate it as much as possible from the other parts of the body. In this way, the wrinkles of the scrotum also disappear, and the stretched skin diminishes in thickness. Transparency may now be easily shown, by placing the light very close (two or three centimetres), and on a transverse axis, passing through the middle of the tumour, so that the rays may traverse it unreflected. This precaution, of no account in simple cases in which error is well nigh impossible, is indispensable in those in which the surgeon remains undecided as to the nature of the disease, precisely because he cannot establish the transparency. M. Nélaton has met with many cases in which the surgeon, from want of being aware of these facts, has mistaken hydrocele for far more important affections of the testis.

*Specific Gravity.*—Most surgeons attach very great importance to this sign, but it will be easy to show that it does not deserve the confidence placed in it. The hand, raising the tumour, has to estimate the weight of the entire mass; and these tumours, when even of the same nature, possess very different amounts of movability, accordingly as they are attached by pedicles, letting the hand pass on all sides, or are bound down by the contraction of the cremaster, dartos, and scrotum. Moreover, we have not to appreciate the absolute weight of the tumour, but its relative specific weight, as compared with that of another mass of a different size—a mass not now at hand capable of being compared, but estimated at some former period, under similar unfavourable conditions, its specific gravity being retained in the memory.

Let a piece of gold of a certain volume be placed in the hand of an individual, and a week afterwards give him a piece of copper of the same volume, desiring him to appreciate the relative specific weight of the two metals. Certainly he will not do this readily, and the task will become far more difficult if we present to him pieces of different size. And yet is the specific weight of gold more than double that of copper. What must happen, then, when we have to compare with each other, under the above-mentioned unfavourable conditions, masses of a specific weight so slightly differing as hydrocele and the other diseases of the testis? For, in fact, the difference of the specific weight of the liquid of hydrocele, and of that of the matters constituting other diseases of the testis, is almost insignificant. Of this we may be easily convinced by examining the figures M. Nélaton has obtained by comparing the weight of various tumours with the weight of the same volume of water.

A hydatid cyst of the testis, weighing 466 grammes in the air, displaced 450 of water, giving a difference of less than $\frac{1}{30}$. An encephaloid tumour gave a difference of $\frac{1}{40}$, and a cancerous sarcocele gave a difference of about $\frac{1}{13}$. Now it is evident that a difference even of $\frac{1}{12}$ is quite inappreciable in the conditions under which the surgeon operates, while the density of the serosity of hydrocele is somewhat greater than that of water, and in the experiments the weight of the tumours are compared with that of water, without taking into account the addition of tissues which exist in the living subject. But these tisssues, viz., the testis and its coverings, are nearly of the same density as encephaloid matter. It may be then said that the sign drawn from the specific gravity of tumour of the testis is positively of no value. It is one of those signs invented in the study, and has continued to be handed down to us because no one has thought of examining into its exactitude.—*B. and F. Med.-Chirurg. Rev.*, Jan., 1858, from *Gaz. des Hôpitaux*, No. 124, 1857.

## OPHTHALMOLOGY.

54. *On some Points in the Pathology and Morbid Anatomy of Glaucoma.*—Mr. Hulke read before the Royal Med. and Chirurg. Soc. (Jan. 12th, 1858) a paper on this subject.

The ophthalmoscopic examination of many cases of glaucoma, and the dissections of several eyes affected with this disease, have furnished the facts detailed in this paper. Two chief forms of glaucoma have been long recognized: they are the acute and chronic, but a large number of cases occupy an intermediate position. The symptoms of acute glaucoma have been often and well described, but the ophthalmoscopic signs are less widely known. They are: a dilated state of the retinal veins, often tortuous and turgid with blood; small ecchymoses scattered over the surface of the retina; occasionally small blood-clots in the vitreous humour; pulsation in the arteria centralis retinæ; and an excavated state of the optic papilla. These last two signs were, the author believes, first noticed by Graefe, who insists upon their being pathognomonic of this disease. Although in acute glaucoma the urgent symptoms often set in very suddenly, yet in a large number of cases the outbreak has been foreshadowed by a train of premonitory symptoms. These are: occasional dimness of sight, often towards evening, shooting pains in the eyeball, muscæ, and a gradual diminution of the field of vision. Graefe has drawn particular attention to this last point. The outbreak may be followed by a remission, only a temporary improvement, for fresh paroxysms will occur, and blindness inevitably result. In the advanced stages sclerotic staphylomata are apt to occur, mostly behind the insertions of the recti tendons. Chronic glaucoma differs from the acute chiefly by the insidiousness of its course, which is unmarked by those violent symptoms which characterize the outbreak of the acute form. It is quite as intractable as the acute form. The retinal veins are turgid, and the retina is sprinkled with hemorrhagic spots, just as in the acute form. Sometimes in the same person one eye is attacked by acute, the other by chronic glaucoma. The facts favour the supposition that acute and chronic glaucoma are only different forms of the same disease. Graefe has called attention to a peculiar form of amaurosis, in which the optic papilla is excavated. This affection must be carefully distinguished from glaucoma, which may be done by observing that the globe is not tense, and the other signs of hyperæmia are also absent.

*Morbid Anatomy of Glaucoma.*—The small blood spots which are sprinkled over the inner surface of the retina are small spots of capillary hemorrhage. This condition was first recognized in glaucoma, by actual dissection, by Mr. Bowman. The bleeding proceeds from the capillaries in the inner layers of the retina, and the blood either spreads literally amongst the elementary structures of the retina, or bursting through the hyaloid membrane, it forms small clots in the vitreous humour. The retinal capillaries are irregularly dilated and studded with small fusiform and globular enlargements—little aneurismal pouches. These dilatations do not occur on the large vessels. The pouches and the vessels communicating with them are usually crammed full with blood corpuscles. In the hemorrhagic spots the retinal tissues are infiltrated with blood disks, which have escaped by the bursting of some of these little aneurismal pouches. Excepting the changes described above, the retinal capillaries have a healthy appearance, and do not present traces of fatty or atheromatous degeneration. The coats of the arteries are hypertrophied. The *vitreous humour* sometimes has a yellow tinge, which is derived from the colouring matter of the effused blood. It often contains blood disks and delicate fibrinous webs; and sometimes also small blood clots, which can be clearly seen with the unaided eye. The vitreous humour has a very remarkable degree of consistence, and does not quickly flow off when the eyeball is cut across. Viewed by transmitted light, the glaucomatous lens has a yellow tint like the vitreous humour, and which is probably acquired from the same source—viz., the colouring matter of the effused blood. The relations of the lens and the vitreous humour favour this supposition. In none of the dissections were any morbid changes found in the choroid, unless when staphylomata were present. Corresponding with the staphylomata, the choroid, retina, and sclerotica preserve their natural relations to one another, and are not separated by any effusions. The choroidal pigment is irregularly distributed; the tissues seem opened out. The subsequent changes in the retina and choroid, in the advanced stages of the disease, have an atrophic character. The dilated retinal capillaries and their contents have been found, dark and granular, in a state of fatty degeneration, and the contiguous parts of the retina participate in these changes. The symptoms, the ophthalmoscopic signs, and the structural changes which take place early in the disease, all point to a state of great vascular excitement in the retina, and a greatly increased internal pressure upon the walls of the globe. It is this pressure which causes the blindness in the early stage of the disease, and the fixed dilated pupil, for when the pressure is relieved by operation, sight and mobility of the pupil return.

Mr. Bowman thought that Mr. Hulke's paper afforded a remarkable instance of the very great advances which had been made within a few years in our knowledge of eye diseases, especially those which were deep-seated, and which, within a comparatively recent period, were extremely obscure, and for the most part very unsatisfactory in regard to treatment. With regard to the morbid anatomy of those affections they were indebted to the great advances made in microscopic anatomy; but these would have been comparatively ineffectual in elucidating the nature of morbid changes in the deeper structures of the eye, had it not been for the opportunities of inspection immediately after the tissues had perished, which were afforded by the plan of treatment followed out by Mr. Critchett and himself within the last three years, of excising globes affected with chronic and excessive pain, more or less jeopardizing the other eye, and at any rate rendering the patient's existence very uncomfortable. The operation of excising an eye which was destroyed already and of no use in the economy, was now known to be an extremely simple proceeding, and one that could be adopted with perfect safety; it was done under chloroform, without pain; it was immediately followed by relief of the symptoms, and an artificial eye could be worn in a few days. He alluded to the operation as having given the means of examining the nature of the morbid changes in the deeper parts of the eye within an hour after removal, and enabling the microscopist to explore with great accuracy all the minute structures which were concerned, and to detail the several changes which they presented. Another circumstance of still greater importance was the invention of the ophthalmoscope, an instrument which was second to none in the exploration of the physical condition of disease in parts not open to ordinary sight. It had laid open all the parts of the eye, so long as they remained transparent, which were situated behind the pupil, and which before were absolutely closed to inspection. Formerly one might conjecture the condition of the eye behind the pupil, and sometimes by dilating the pupil with belladonna, get a dim insight into certain parts of the interior; but nothing was known of the structure of the retina during life from actual examination. With the ophthalmoscope everything near the axis of vision could be explored if the media were clear, and if they were not clear their opacity was thus disclosed. The Germans, by whom the instrument had been invented, were in advance of the English and French in its application; and no one had done more in the exploration, by its means, of the changes in the deeper parts of the eye than Professor Graefe of Berlin, to whose work on glaucoma the author had alluded. He had made out all the changes occurring in that remarkable disease. He had shown that there was a gradually increasing pressure within the eye contingent upon an increased afflux of blood into the vessels of the interior, and that with this there were several secondary changes. There was an enlargement of the veins on the surface of the eye in the same way as the veins of the abdomen were enlarged when the circulation through the liver was impeded. There was also an excavated state of what he should not call the "optic papilla," but the entrance of the optic nerve. Another remarkable condition alluded to by the author was the pulsation of the artery of the retina. Naturally that artery had no visible pulsation; but if the eye was pressed, even in a healthy person, for a certain time the pulsation might be rendered visible, the circulation being so impeded that the afflux of blood was shown at every jet. When this condition did not exist in glaucoma the slightest pressure would produce it, and Graefe regarded it as a pathognomonic sign of the disease. All these conditions characterized the disease in an unmistakable manner, and pointed to the mode of treatment which Graefe had recommended. The practice at Moorfields had fully borne out the results which Graefe had announced at the recent Brussels Congress—namely, that by excising a portion of the iris in a particular way, in acute or chronic glaucoma (particularly the former) there was almost from the first a diminution of pressure, followed by an abatement of the symptoms, and an improvement of the vision, even when under great pressure it had been abolished for a time. Graefe had shown that the loss of vision in the condition of early glaucoma was not the result of any change primarily occurring in the retina, but of a pressure of the vessels, and that if such pressure was removed the retina regained its power, just as by compression within the head the brain might lose its functions for a time, and regain them when the pressure was removed. A rather interesting analogy was then shown by the ophthalmoscopic exploration of the eye in glaucoma—an analogy between the condition of the eye under such circumstances and the condition of the head in cases of internal pressure. The sclerotica, when tense, was just as effectual a source of counter-pressure upon the bloodvessels as the cranial walls could be; and he thought it probable that if the cranium had its contents suddenly increased by an additional afflux of blood the arteries would, if they could be seen, be found to be like those of the retina, in a state of pulsation.

Mr. Critchett said that the chief point of value in the paper was that the ophthalmoscope and microscope were seen to be beautifully illustrative and confirmatory of each other; and in that respect he thought Englishmen were in advance of the continent, however they might be behind the Germans in some other matters. He had no doubt that M. Graefe and others who had noticed certain points in reference to the appearances with the ophthalmoscope, would be interested in knowing that those points were illustrated and confirmed by microscopic observations. Where the globe had been the seat of serious disease, and was destroyed as an organ, remaining only as a source of irritation, and threatening by its sympathy with the other eye to implicate that organ also, the best practice was to remove the globe; and the introduction and carrying out of that principle had enabled the author to make a step in advance of the continent. All who had used the ophthalmoscope must have constantly felt the difficulty of interpreting the phenomena observed, which had been accordingly differently interpreted by different observers; but the mode of practice to which he had referred had led to a more accurate examination, and thus a most important advance had been made in reference to the scientific investigation of ophthalmic disease. The author had been one of the first to lead the way in that special form of investigation, and he looked forward with confident anticipations to the result.

Mr. HAYNES WALTON said that he and his colleagues had long recognized, and were among the first to point out the sympathetic irritation of the eyeball, and the advantages to be derived from the removal of a globe thus in danger of affecting the other. Extirpation, he believed, was the plan usually adopted at Moorfields, but the same result might often be obtained by removing a portion of the eyeball, so that a stump of the eye remained, which was better than nothing, and more adapted for an artificial eye. It was said that the patient did not recover so quickly as after extirpation, and that he fully admitted. It was also alleged that troublesome bleeding might ensue; but if the operation was performed quickly, and the parts were covered with lint or cotton wool, and a slight compress applied, the hemorrhage would almost always be checked and the recovery facilitated. He would, however, extirpate the eyeball when it was very much disorganized, where there had been a great deal of suffering in staphyloma, and where the sclerotica was much enlarged. The author's paper, he believed, rendered obsolete nearly everything previously written on glaucoma. He wished to bear testimony to the value of the ophthalmoscope, the application of which he found more and more useful and easy. A man applied to him a few days ago stating that he had become suddenly blind while at work. By the use of the ophthalmoscope he (Mr. Walton) at once discovered the effusion (between the choroid and the retina), which fully accounted for all the symptoms. Formerly the case would have proved very perplexing, and been probably attributed to cerebral derangement.

Mr. BOWMAN said that the system of extirpation was not always adopted at Moorfields. When the disease was confined to the front, the posterior part being comparatively healthy and not gorged with blood, a portion of the globe might be abscised; but if the disease was chiefly behind, and there was an enlarged condition of the vessels of the deeper tunics, excision he believed was best for the patient, and afforded the most rapid means of cure.—*Med. Times and Gaz.*, Jan. 23, 1858.

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55. *Vascular Tumour of the Orbit of many Years' Standing, and latterly Producing Threatening Symptoms, successfully treated by the Injection of Tannic Acid.*—Mr. HAYNES WALTON read before the Royal Medical and Chirurgical Society the following case of this character. A lady, 20 years of age, was sent to Mr. Walton by Mr. Square, of Plymouth, in 1856, on account of a vascular growth in the left orbit. The eyeball was prominent, and turned slightly upwards and outwards, restricted in motion, and incapable of being directed inwards. The lower eyelid bulged, and was slightly discoloured, especially towards the nose. By turning down the tarsal margin, there was exposed a growth, having the appearance of a congeries of veins attached to the eyeball, and which was evidently only a part of a larger mass. Pressure emptied it, the act producing pain, and redistension took place very slowly. The chief subjective symptoms were, pain on the slightest exertion, and in extremes of temperature and during the catamenia; inability to lie down, in consequence of unpleasant sensations in the orbit and head; vision nearly extinct. The affection was congenital. Very soon after birth, slight swelling of the lower eyelid was discovered. At the age of thirteen it attracted attention generally, and besides being larger, there was a bluish tint of the integument. Reading or writing for some hours always caused temporary enlargement, and heightened the colour. Mr. Walton diagnosed the tumour to consist chiefly of dilated and

tortuous veins, and came to the conclusion that it was limited to the anterior and inner part of the orbit, and did not pass posteriorly. He resolved to treat it by the method of injection, and sought for an agent which might be safely used. Some experiments with the perchloride of iron caused him to reject it as unsuitable, from the tendency of the free acid which it contains to produce sloughing, or at least severe local action—a result to be avoided in such a situation. Ultimately, he determined to employ tannic acid, as an agent not possessing caustic properties, and one readily producing coagulation of the blood. A strong solution of this substance was thrown in with a syringe. There was rapid cessation of the hemorrhage which followed the preliminary puncture, and the solidity of the tumour showed the extent of the coagulating action. Considerable swelling of the eyelid and chemosis of the conjunctiva ensued, accompanied with local pain and slight constitutional disturbance, but this was of short duration. A slight incision deemed necessary in the tumour was in a day or two followed by a dark brown discharge. Later an abscess formed under the lower eyelid, and was evacuated by an external incision. The eyelid was long paralyzed, but ultimately the movement completely returned. The discharge from the tumour continued for many weeks, varying in quantity, and several times pain and local irritation preceded the escape of fibrinous clots; and twice a small cretaceous mass was discharged. When the patient left town, just three months after the commencement of the treatment, there was no longer any secretion from the seat of the disease or the abscess, and all trace of the tumour had long disappeared. The eyeball had fallen back nearly to the natural plane, although all its movements were not perfect. It could be directed downwards and outwards naturally, but not turned fully inwards, nor could it be raised to more than half its proper extent.—*Med. Times and Gaz.*, Feb. 6, 1858.

56. *Nævi on the Eyelids cured by Perchloride of Iron.*—Mr. Hulke has, during the last year, seen four cases of venous nævi on the eyelids, three of which were treated with perchloride of iron, not in the way of an injection, but by dipping a piece of silk in the solution, and passing it through as a seton. A little suppuration was excited in the track of the thread, but on the second or third day the whole growth became solid, and no unpleasant effects were produced.—*Ibid.*

57. *Dislocation of the Crystalline Lens.*—Mr. White Cooper relates (*Med. Times and Gaz.*, Jan. 2 and 9, 1858) some very interesting cases of this accident, and lays down the following rules for the treatment of these cases.

"When an opaque lens lies in the anterior chamber, it can only be regarded in the light of a foreign body, and the safest course will be to extract it. Instances have been mentioned where little irritation has been caused, but these are exceptional, and it must be borne in mind that inflammation may be lighted up at any moment—the vibration of a railway, the shaking of horse exercise, or a multitude of other circumstances, may give rise to it. According to my experience the operation of extraction in such cases is attended with little risk, and by its performance the eye is relieved from a great and constantly impending peril. Undoubtedly the consent of the patient may be withheld, and then we can only adopt palliative measures if inflammation exists, or precautionary measures if the patient has the good fortune to escape it. If the patient be very young—and Mr. Walton mentions a case of dislocated lens in an infant of three months old—absorption may take place without the necessity for an operation.

"In proceeding to extract opaque lenses, I give the preference to the lower section; this enables the lens to escape at once if free, or if adherent to the iris, the connection can be separated with facility. We should remember, when dealing with a spontaneously displaced lens (especially if the lens be osseous), that the vitreous humour is almost certainly fluid, and that, therefore, the gentlest handling will be necessary. If the hard lens is behind the iris and attached to it, the pupil will probably be so rigid as to make it exceedingly difficult for the lens to pass through; under these circumstances it is far better to slit the margin of the pupil with a pair of scissors, and so to enlarge it, than to endeavour to force the lens out; for the vitreous humour will escape, though the lens will not, and so the globe may be emptied to a serious extent.

"Though not an advocate for the use of chloroform in ordinary extractions, I consider it of the greatest value when dislocated and osseous lenses have to be removed. Adhesions may exist; the operation is then necessarily prolonged, and requires extreme care and delicacy in the performance. Without chloroform the eye becomes restless and irritable, retreating from every touch, while the lids spasmodically close. The anæsthetic, then, is a great boon to the operator, and a still greater to the patient, sparing much suffering while under the surgeon's hands, warding off secondary neuralgic pain and irritation, and thereby hastening convalescence."

## MIDWIFERY.

58. *Reciprocal Sympathies between the Uterus and Bladder in Women.*—Dr. W. T. Montgomery read before the Medical Association of the College of Physicians, a very interesting paper on this subject. The reciprocal sympathy between the uterus and bladder is familiar to every practitioner. This is constantly exemplified, Dr. Montgomery observes, in the increased urinary irritation so often accompanying ordinary healthy menstruation, and still more remarkably, when the latter function happens to be painfully performed. Again, in early pregnancy, the same thing is observed; and the remark is trite, that morbid actions in the uterus, whether benign or otherwise, often have the earliest announcement of their invasion, in symptoms of disturbance first noticed in the functions of the bladder.

Thus, congestion or slight ulceration of the cervix uteri, and still more strikingly, malignant affections of that part, frequently excite, in the first instance, in the patient's mind, only apprehensions of gravel, or some vesical disease, for which alone she is induced to seek advice; but woe betide us, in this and many other circumstances, if we let ourselves be beguiled into the belief that because a particular organ or locality is affected with certain anomalous symptoms, it is therefore the seat of some disease, of which these symptoms are to be taken as indications; and so prescribe. Could we, for instance, expect to cure the itching of the nose and angle of the eye which accompanies the presence of intestinal worms, by applications to the Schneiderian, or conjunctival membrane?

Mrs. C. had, for a long time, intense, intolerable, distracting itching of the perineum and anus, which really rendered her life miserable, and for which she had consulted many, and used a multiplicity of remedies; many of them, no doubt, very appropriate for *pruritus*, but *not for her.* When she came under my care, I also, at first, adopted the wrong course; I prescribed *for the symptom,* and *not for its cause.* But fortunately, after seeing her a few times, something led me to suspect the existence of intestinal worms. I gave her a dose of the Kousso, which caused the expulsion of some very large lumbrici, and all her troubles were forthwith at an end.

Mrs. M. consulted me for pruritus of the pudendum, from which she suffered to such a degree, and it was accompanied with other symptoms of so distressing a kind, that she declared she loathed herself, and felt her life an intolerable burthen to her. She had used gallons of lotions, and all sorts of ointments, without the slightest relief. Examination showed an intense congestion of the cervix uteri; this was made the object of treatment, and on its removal, the pruritus and all its miserable concomitants totally ceased.

I have already called the consent between the uterus and bladder, a reciprocal sympathy, because it equally acts in the reverse direction, irritations of the bladder being frequently found to influence and disturb the functions of the uterus—a fact which should not be forgotten in practice, and especially in the treatment of the diseases of pregnancy, when the administration of the more irritating diuretics should be avoided, lest they should excite contraction of the fibres of the uterus, and so induce premature expulsion of its contents. That they are capable of so doing is, unfortunately, popularly known, and advantage is taken of such knowledge for base and wicked purposes.

And again, we must remember that vesical disturbances may produce a group of symptoms so closely resembling those arising from disease of the uterus, as to be mistaken for them.

Several years ago, there occurred in this city, a case forcibly illustrative of this, and which excited no small sensation. The wife of a general officer, at that time holding the highest military command in this country, began to complain of distressing symptoms, having all the characters of those produced by uterine disease. Such was her own conviction, and on her consulting an accoucheur, then in large and high practice, her worst fears were confirmed; he pronounced the affection to be cancer uteri, and could only promise palliation. But she had many anxious friends, whose happy privilege it is always to hope for the best, and some of them urged upon her the necessity of having another opinion; to this, she at last consented, and the gentleman called in, pronounced the case to be one of stone in the bladder; the stone was extracted, and the lady passed at once from a state of pain and misery to one of comfort and happiness.

A few years since, a patient came to consult me, stating that, to gratify her friends, she had come to town for my advice, although quite aware that she could not be cured. She also handed me a written statement of her case, which set forth that she had had seven labours of terrible severity, owing to contracted pelvis, always requiring instrumental delivery; that for some months she had exhibited unequivocal symptoms of the existence of cancer uteri; and I confess that, from this account, and the woman's own description of her symptoms, I thought there was little room for doubt as to the nature of her malady. However, I of course gave no opinion, and suspended my judgment until I should have instituted a careful examination; on doing so, I could discover no disease of the uterus, but the neck of the bladder was distended, and felt very hard. I passed a sound into it, which at once struck against a stone of considerable size. Mr. Fleming now saw the case with me; the stone was removed, and the woman soon returned home well, and continued so.

There are, Dr. M. states, four forms of disturbance of the bladder which are not unfrequently produced by parturition, even when that process is easy and natural:—

1st. Irritability, causing an inconveniently frequent desire to discharge its contents; and this with a certain amount of pain.

2d. Loss of expulsive power; the natural sensibility being unaffected.

3d. Total loss of the natural sensibility, or irritability, which prompts to the evacuation of the contents of the organ.

4th. A peculiar form of hysterical retention.

The first two of these states require little more than to be glanced at; the third and fourth demand a somewhat more particular consideration.

1st. The irritability of the bladder which succeeds labour, almost always yields readily to soothing measures, such as warm anodyne fomentations, a linseed meal poultice, opiate and camphorated embrocations, an opiate suppository in the rectum, or the administration of the mist. camphoræ c. magnesiâ, with tincture of hyoscyamus and syrup of poppy. Should there be reason for suspecting inflammation, it may be necessary to apply a few leeches, and use other appropriate remedies; but this is rarely the case.

2d. When the expulsive power is in abeyance, but the natural sensitive irritability remains unimpaired, the desire to evacuate the contents of the organ becomes distressingly urgent, in proportion to the amount of accumulation within it.

This condition is sometimes produced by pressure from the uterus happening to be larger or lower than usual, perhaps displaced, or from the presence of an uterine tumour, in which case, raising up the obstacle may remove all difficulty. Sometimes, merely permitting the patient to assume the sitting position may suffice. Should these plans not succeed, the introduction of the catheter gives the desired relief.

3d. Again, there is the third and most important variety, in which there is no irritability, not even the natural desire to evacuate the urine, nor sensation, nor consciousness of requiring to do so, although a large accumulation is taking place, which will soon produce symptoms, not alone very distressing in themselves, but what is worse, conditions which may lead us greatly astray, and excite groundless apprehensions of great impending danger; and it will not lighten our discomfort, should it turn out, as has often happened, that the patient owes all her annoyance to our inadvertence, or to the carelessness of the nursetender; for if we are careful in making the requisite inquiries, and give the proper directions to the nurse, and she attend to them, the accident, of which I am about to speak, *could not happen.*

The first time I remember to have had my attention drawn to this condition was in the year 1832, and in the case of an esteemed medical friend's wife; who was delivered of her first child after a natural labour of fifteen hours, presenting nothing unusual, if we except the most tremendous rigor I ever witnessed, which occurred shortly after delivery, and was so violent that I really thought it must have ended in convulsions; but simple means removed it, and she went on well. Before leaving her, I cautioned the nurse to encourage the lady to pass water in the course of the evening, as she had not done so for several hours; this, however, was neglected, as the lady neither expressed, nor felt any want; and at my next visit I found my patient very feverish, with headache; a pulse above 120; the belly tumid and tender to the touch. Before proceeding to introduce the catheter, of which she had a great horror, I advised her trying to pass water, which she did, to the amount of at least two quarts, with instant relief to all the symptoms. Her convalescence was uninterrupted.

At a time when there were occurring several cases of puerperal fever through town, a medical friend called on me to request that I would accompany him to visit a patient of his, who had been confined two days previously, after a severe and protracted labour. She was not going on well, and he thought he had to deal with a case of the above-mentioned formidable disease, as his patient was very feverish, had most distressing headache, a rapid pulse, with abdominal pain, swelling and tenderness. On seeing her, I thought the presence of a large quantity of fluid was beyond doubt; a catheter was introduced, and an enormous accumulation of urine withdrawn, with immediate and decided relief to all the symptoms. It was then ascertained, that she had not passed water since her confinement, nor for many hours before it; she recovered perfectly.

The next case occurred to me under circumstances which invested it with a very unusual interest, and caused it to make a great impression on me. I happened to be staying for a few days in a very fashionable watering-place in England, where there resided a family of great wealth and consideration in society; the eldest son of which, had married a lady of large fortune and high connection. This lady had recently been confined of her first child; and, as may be readily supposed, the attendance upon her had been a matter of warm ambition among the local practitioners; and the gentleman who carried off the prize was, I fancy, more envied than congratulated by his *confrères.*

I met this gentleman accidentally in society, and the following morning he called on me in a state of painful agitation and distress; "I am," he said, "in a terrible dilemma, and fear I am a ruined man." He then proceeded to tell me that he had attended Mrs. —— three days before; that she had rather a severe labour, and that at the end of thirty hours, finding the labour not likely to terminate by the natural efforts, the head having remained stationary for several hours, low down in the pelvis, and pressed strongly against its floor, he had delivered her with the forceps, without, as he assured me, any difficulty whatever. All then seemed well, but next day the lady was uncomfortable, restless, feverish, and rather larger than she ought to be, and this state went on increasing until the third or fourth day, when to his horror, the urine began to trickle away incessantly, and a slough about the size of a sixpence was discharged from the vagina. He at once, naturally enough, concluded that a vesical fistula was established; and I, taking his account as my guide, thought there was but little doubt that his worst apprehensions would be realized.

At his urgent request I accompanied him to visit the lady, whom I found with a hot skin, much headache, a very quick pulse, a very distended abdomen, which was moreover so tender that she could hardly bear it to be touched; but I distinctly ascertained the presence of fluid. On examining *per vaginam*, I could not detect by the finger any breach of surface along the anterior wall, or back of the bladder, and I suggested to Mr. —— that it would be well to pass a catheter into the bladder; which, at his request I did; and gave exit to a quantity of urine, sufficient nearly to fill an ordinary wash-hand basin. Subsidence of the abdominal swelling immediately took place, the lady felt inexpressible relief, and from this day went on well.

The truth was, that the bladder had been forgotten by all the parties concerned; and the patient had never passed water since her confinement, nor felt a desire to do so; until at last the bladder became so distended that the resistance at its neck was overcome, and the urine leaked out at the front, as fast as it was pumped in from the ureters at the back; and it so happened that just as this began, a small slough had separated from the mucous membrane of the posterior wall of the vagina, which had been strongly pressed on by the head for several hours.

4th. Another state, not exactly ranging under any of the former kinds, seems to be of a purely nervous or hysterical character, and mixed up with a certain amount of *mauvaise honte.* The patient has a decided desire to pass water, and suffers distress from its retention; but has at the same time, the greatest reluctance to make the necessary effort, and *positively refuses to try, if any one, even the nursetender, is present,* declaring that it would be impossible for her to succeed.

Under those circumstances, suitable arrangements should be made by the nurse, and the patient then left by herself for a time, during which she may succeed in accomplishing the desired object; if she does not, some anti-nervous medicine should be given, with strong assurances of its potency in removing such difficulties; let her try again during our absence, and if she has not succeeded when we come to pay our next visit, we must declare that longer delay would be unsafe, that we will wait a little while in the drawing-room, and if she does not then succeed, that we must draw off the water before we leave the house; this generally insures success.

In many of these cases they do not succeed, because they do not make the proper effort; and this, I believe, is oftentimes simply because they cannot, and not always because they *do not choose;* this state of nervous inability ought to meet with much tender consideration. I may observe here, that I have never met with this peculiar form of affection, except in the higher grades of society, and almost always in women of a highly sensitive nervous temperament, some of them having experienced a similar difficulty before marriage, and also under ordinary circumstances distinct from pregnancy.

Now, is this state which I have just been attempting to describe, analogous to, or identical with another, which I have a few times met with in practice, and which may be thus described: A lady in perfect health retires to her bedroom for the night, and before lying down to rest attempts to make water, and finds she cannot—she is much surprised—goes to bed, and perhaps falls asleep; in the morning she is in great distress, but still unable to empty the bladder, and now her pain is so great, she is compelled to seek for assistance—the catheter is introduced and all her trouble is at an end; or, perhaps, for several days its use continues to be required, and then all goes on as well as ever; but in either case, no circumstance of general ill-health, or local derangement or displacement can be discovered. The woman, in fact, is otherwise quite well.

The year before last a married lady of a highly nervous temperament, so affected, drove six miles into town to my house, in great torture: I drew off the water, and she required no further assistance.

Last year I was urgently summoned to see an equally nervous maiden lady similarly situated; on laying my hand on the abdomen I felt a tumour, as large as a melon, and as hard as a cricket ball; and *per vaginam*, it really, at first, suggested the idea of a fibrous tumour of the uterus, this organ being quite displaced. I introduced the catheter, drew off a large accumulation of urine, and the abdominal tumour—which was nothing more than the distended bladder—at once disappeared. The feature in this case which particularly arrested my attention, was the extraordinary hardness and the distinct outline of the abdominal tumour, which would readily have caused it to be mistaken for a solid morbid growth.

I may here observe, that in the well-known case of the virgin mock prophetess, Joanna Southcott, there was felt, by competent judges, a circumscribed tumour in the abdomen, which was supposed to be the gravid uterus. Dr. Reece, in his published history of the case says: "In that part occupied by the womb, there was a firm circumscribed tumour as large as a man's head, bearing the shape of the womb; I have no doubt of its being an enlargement of that organ." But when she died no tumour existed, and that which was felt during life was attributed to the prophetess having learned to retain the urine until the bladder became considerably distended; which seems highly probable.

In my case last related, it was necessary to relieve the lady every day for a week; when she perfectly regained the power of micturition. I may just mention, that the remedy which seemed to remove her inability was the ergot of rye; did it do so by stimulating the fibres of the uterus in the first instance, and then by consent, those of the bladder? Perhaps so; but as the same agent has produced a similar effect in men, a direct influence may be equally admitted.—*Dublin Hospital Gazette*, Dec. 1, 1857.

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59. *On Coagula formed in the Veins during the Puerperal State, and their occasional Transportation into the Pulmonary Artery.*—Dr. Graily Hewitt read before the Harveian Society (Dec. 3d, 1857) an interesting paper on this subject. "The painfully sudden death of a lady, a member of the late royal family of France, which, according to the accounts given in the public prints, was caused by the passage of a clot of blood into the pulmonary artery, had been, the author remarked, the subject of much interest. He proposed to call the attention of the Society to some observations suggested by the contemplation of the case in question.

"The various morbid appearances presented by the veins and their contents in cases described as 'phlebitis' have been always objects of much interest, and up to within a very recent period were taken as evidence of the existence of inflammatory action in those vessels. The author considered that the researches of Virchow conclusively proved that the appearances in question were due to the formation of coagula in the veins, and the subsequent transformations through which these coagula had passed. According to the views of Virchow, the study of the changes spoken of as phlebitis was in reality the study of the 'thrombus,' as the coagulum is termed, and of its metamorphoses.

"In applying these views to the consideration of those cases of diseases of the veins which are apt to occur after childbirth, and taking with Virchow the starting point to be the formation of the coagulum, it was necessary to inquire what are the circumstances which may lead to, or favour the formation of coagula in the veins during the puerperal state? Amongst these were enumerated:—

"1. The large amount of fibrin in the blood, both positively and relatively, during pregnancy, a condition predisposing to coagulation; and possibly also certain other morbid conditions of this fluid, as uræmia, &c.

"2. The mechanical effects of the presence of the uterine tumour, which, leading to congestion of certain parts—the vagina, rectum, lower extremities, etc.—might favour coagulation; also, the impediment to the descent of the diaphragm leading to distension of the right heart, and other parts of the venous system.

"3. Pressure, unusual in amount or duration, on the large venous trunks in the abdomen, produced by the head of the fœtus in its passage into the pelvis; the head being too large, or the passage contracted.

"4. Deficient contraction of the uterus, and of the large venous plexuses situated near it (Virchow), after delivery.

"5. The most important, perhaps—the presence of the 'physiological coagula,' as they may be termed, which close up the uterine veins at the point of attachment of the placenta, and which must extend a variable distance, and have a variable size, according to the degree of uterine contraction.

"6. The morbid conditions of the blood liable to be produced after delivery, owing to the occurrence of hemorrhages and other causes.

"A description was then given of the morbid appearances usually observed in the veins after childbirth. Affections of the veins generally occurred in cases where some of the causes just alluded to as leading to coagulation had been present. In most of these cases the veins first affected were those leading from the uterus and ovaries; the coagulation begins in the veins of these parts, and travels onwards towards the heart. The coagulum always terminates, according to Virchow (whose description is in conformity with those of Dr. Robert Lee and others on this point), in a rounded extremity, which projects a little beyond the next entering vessel, and by further deposition of fibrin, the clot extends. The coagulum also travels backwards, occluding after a time the veins which enter an already blocked-up trunk. The iliac, femoral, and other veins of one or both sides may thus become occluded, by a coagulum extending from the uterine veins of the same side, producing at this stage the disease called 'phlegmasia alba dolens.' The 'physiological' coagula may thus give rise to coagula of a pathological character, other circumstances favouring the production of the latter being present; or, certain states of the uterine surface following delivery may occasion a like issue of the case. The clot, once formed, undergoes two kinds of change. It shrinks, becomes decolorigiæ, adherent, and with the vein is reduced to a cord-like substance (adhesive phlebitis); or it softens, breaks down, and the result is the formation of a fluid in many respects resembling pus (suppurative phlebitis). The outer non-softened portions of the clot in the latter case remain as false membranes adhesive to the normal walls. The attractions of the veins to the puerperal state are only peculiar in respect of their causes; the coagula once formed, are liable to the same kinds of transformation as in other cases. The observations of Virchow respecting the constant presence of the 'continued coagulum' are of especial interest in relation to the occasional passage of portions of altered coagula into the pulmonary artery. This continued portion projecting into the still patent vessel, undergoes, but more rapidly under certain circumstances than the other parts, the 'thrombus metamorphosis.' It becomes adherent to one side of the vessel, and the projecting part may, at a certain stage of its metamorphosis, be broken off and carried away by the blood-current into the pulmonary artery. Death more or less sudden, and attended, according to Virchow, with symptoms of a peculiar asphyxia, followed the passage of these altered coagula into this vessel or its branches. Dr. Simpson has collected nine cases in which death, more or less suddenly, occurred a few days after delivery, apparently brought about by the obstruction of the pulmonary artery, by transformed coagula introduced from the veins. Probably death more often occurs from this cause than is generally imagined, the cause being overlooked. Lastly, the author was of opinion that the pulmonary artery might be occluded by clots, liable to be formed in puerperal women reduced by hemorrhage, etc., these coagula not having existed as such for a sufficient time to have undergone the transformation previously alluded to, and not having been formed quite in the same way. These clots, at first perhaps small, would increase rapidly by further accretion of fibrin around them, and forcibly obstruct the pulmonary arteries to such a degree as to produce death."—*Med. Times and Gaz.*, Dec. 12, 1857.

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60. *On the Membrana Decidua which surrounds the Ovum in Cases of Tubal Gestation.*—Dr. Robert Lee read a paper on the subject before the Royal Medical and Chirurgical Society, January 26, 1858. He commenced by citing the various authorities to prove that the common opinion from the days of William Hunter to the present time was that the decidua, or outer surface of the secundines, belong to the uterus, and not to the ovary, or that part of the conception that is brought down from the ovary; and that in cases of extra-uterine pregnancy, a deciduous membrane was still to be found in the cavity

of the uterus. But a case is recorded in the seventh volume of the *Medico-Chirurgical Transactions*, in which the uterus is stated to have been "considerably larger than we observe that organ to be in the unimpregnated state, even in women who have borne several children. On laying it open, the uterine vessels were observed to be very large but empty, and there was a great quantity of gelatinous matter in the cavity and neck of the uterus. When this was washed off, the internal surface of the viscus looked very vascular, having been highly injected; but there was not the least appearance of a decidua." A second case is recorded in the seventeenth volume of the *Medico-Chirurgical Transactions*, in which the author himself was surprised at finding that "no organized deciduous membrane lined the cavity of the uterus, but the whole of it was coated with a thin layer of albumen." This case occurred in 1829, and the preparation was placed on the table of the Society in 1832; but until 1836, when another example of tubal gestation came under his observation, it does not appear that he made any attempt to determine whether the ovum in the Fallopian tube was surrounded by decidua. The two preparations were then examined together, and a description of the appearances observed was published in the *Medical Gazette* for 1839–40. These cases, with four others which have subsequently come under his observation, are the subject of the present communication. In Case 1, on opening the tube, and examining the different parts of the ovum, he found a deciduous membrane everywhere surrounding the chorion, and closely adhering to the inner surface of the tube, as the decidua usually does to the lining membrane of the uterus. Within the decidua, the chorion, amnion, and embryo were distinctly seen. The uterus was larger than natural, and there was no appearance of decidua lining its internal membrane. In Case 2, on carefully examining the ovum contained in the right Fallopian tube, it was evident that a deciduous membrane everywhere surrounded the chorion, and adhered to the inner surface of the tube. The placenta, which was situated at the extremity of the ovum nearest the uterus, was seen covered with the decidua, and coagula of the fibrine of the blood were traced from the interstices of the placenta through the decidua into veins in the thickened muscular coat of the tube. The uterus was considerably enlarged, and its inner surface was coated with a very thick layer of yellowish-white soft substance. There was no trace of any arterial or venous canal in this cavity. In the third case, the fœtus had reached the age of six months, and was contained in a cyst which adhered to the omentum and intestines and to the surface of the uterus, and contained a great quantity of thin, fluid-like pus. The walls of the uterus were healthy, and the cavity empty. There was no decidua or substance of any kind coating its inner surface, but a decidua was attached to the placenta in the usual manner. In Case 4, the greater part of the ovum had been removed, but still the decidua reflexa could be very distinctly seen covering a considerable portion of the villi of the chorion. In the uterus was found a coating of considerable thickness, and of a yellowish-white colour, in which neither arteries nor veins could be traced. Case 5 is also one in which only a portion of the decidua was found in the tube. In Case 6, the substance lining the cavity of the uterus resembled the fibrine of the blood, and was of a red colour at its upper part; where it had been detached from the surface of the uterus, the lining membrane presented a perfectly natural appearance. The embryo was inclosed in the amnion, with the vesicula umbilicalis remarkably large. The cells of the placenta and the villi of the chorion were distended with coagulated blood, and surrounded by deciduous membrane. By a careful dissection subsequently made, the decidua was found to consist of placental decidua, decidua vera and reflexa, with a decidual cavity. An enumeration of the preparations in St. Bartholomew's and Guy's Hospital museums is appended, illustrating the pathology of Fallopian tube conception. In the former there are five examples, and in one of these the museum catalogue states that "the outermost membrane inclosing the fœtus has all the character of decidua. Besides this membrane, the amnion and chorion are distinct; the fœtus and umbilical cord are also perfect." In the opinion of the author, there can be no doubt that a decidua surrounds the ovum; and though none of the other preparations have been dissected with the view of ascertaining the point, yet in all the separation of the ovum from the inner surface of the tube has been carried to an extent sufficient to enable us to demonstrate the fact. There are thirteen preparations in Guy's Hospital museum. The author was permitted by Dr. Wilks, the conservator of the museum, to make a minute examination of the ovum in one of these, which had escaped entire through a rent in the Fallopian tube. He had the satisfaction not only to discover the vesicula umbilicalis, but to see the chorion completely surrounded by decidua, as in the case described at the early part of this communication. There can be no doubt that if the ova in these preparations were submitted to a similar examination, a decidua would be found in all, surrounding the ovum in the Fallopian tube. He did not wish to express an opinion on the nature of the membrane or substance found coating the inner surface of the uterus in the greater number of these preparations, which has been almost universally considered to be decidua since the days of Dr. William Hunter, although no bloodvessels in it have been discovered. His great object was to demonstrate the existence of a decidua around the ovum in cases of tubal gestation.

Dr. John Clarke called the attention of the Society to one of the preparations of Fallopian tube gestation laid upon the table. The uterus, he said, was laid open, exhibiting, as he thought, a true deciduous membrane; not the membrane that was thought formerly to be formed by lymph poured out, but (as understood of late years) the inner membrane lining the uterus, and presenting a peculiar tubular appearance. In the neck of the uterus there was the usual secretion in the glands. It was quite clear that in the Fallopian tube there was no appearance of a strictly speaking deciduous membrane; there was nothing but the fœtus, the amnion and chorion lying against the inner coat of the tube. He did not venture to state, however, that in no case was a deciduous membrane formed round the ovum in Fallopian tube gestation; but he regarded the cases in which there was such a membrane as indicating an effort of nature to accommodate the part to a new function, which it was not originally intended to perform. The ovum had escaped from the ovarium, and lodged in the tube. Nature did not set up the inflammation, as in cases where foreign bodies existed; for this was not, strictly speaking, a foreign body, but a living body, intended by nature to be matured and brought into the world, and she accommodated, as far as possible, the tube to the purposes of the uterus; and accordingly there was a certain membrane thrown out somewhat resembling a deciduous membrane, but, as appeared upon close microscopical observation, totally differing from the decidua in the uterus, having, however, certainly the function for a short time of sustaining the life of the ovum. The preparations exhibited did not appear to him (Dr. Clarke) to support the views of the author, since in almost all of them there was a deciduous membrane in the uterus, whether called lymph or shreds; and in those cases where it was not found the uterus was large, and there was some statement of uterine action, followed by the discharge of a membrane or fluid; and it was but reasonable to suppose that in those cases the deciduous membrane might have escaped.—*Med. Times and Gaz.*, Feb. 6, 1858.

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61. *Extra-Uterine Gestation.*—A case of this nature, dating thirty-three months from its commencement, and terminating in abdominal fistulæ, and the extraction of the remains of the fœtus, is reported by Dr. Diamantapuplos. She was seventeen years of age: commenced to menstruate at twelve years and nine months; was married at thirteen years; and aborted with her first conception in May, 1853. She menstruated regularly afterwards until December 15th. About the presumed epoch of the present conception, she received a blow on the lower belly.

During the first three months, she had nausea and vomiting: a little later she perceived the motion of the child, which, with the secretion of colostrum, continued until the normal term expired. At the sixth month, she had violent pains at the lower part of the abdomen, which were completely removed by a copious bleeding.

At nine months after fainting, labour pains commenced and continued for four days. She had milk fever; and the secretion of milk continued, alternating for three months, with an offensive whitish uterine discharge.

She continued under treatment with diuretics and bandaging, her general health being pretty good, save a slight attack of mild typhoid fever, at about the eighteenth month.

She was examined in May, 1855; and, in addition to evident fluctuation, a tumour was found, which gave the sensation of the head of a fœtus. Ballottement was manifest; the uterus appeared retroverted.

About August, 1855, after a violent abdominal erysipelas, two fistulæ were established at the umbilicus, discharging a sanious liquid: at six months from this date, hair came away with the discharge.

In February, 1856, she suffered from diarrhœa, indigestion, intestinal hemorrhage, extreme emaciation, hectic fever, &c. &c. The cavity of the tumour was now explored most carefully, and the situation of the bones of the head, their size, and the limits of the adhesions of the wells of the cyst to the abdominal parietes, carefully made out.

On the 25th of September, 1856, the patient was operated on under the influence of chloroform, in the following manner: A crucial incision was made from the centre of the fistulous opening; and first one parietal, then the other, was extracted; afterwards, the two frontal, the occipital, the left temporal, and lastly, the maxillaries; then many bones of the trunk, putrefied: the cyst was then well washed out with water. After some short time she completely recovered, the menses reappearing towards December, 1856.—*Midland Quarterly Journ. Med. Sci.*, Jan. 1858; from *Gaz. Médicale d'Orient*, June, 1857.

62. *Ruptured Uterus.*—Mr. Dillon Kelly records (*Dublin Hosp. Gaz.*, Jan. 15, 1858), a case of this, the chief point of interest in which was the enormous size of the rent in the uterus, through which the free margin of the liver and a mass of small intestine found entrance into the cavity of this organ.

63. *Intra-Uterine Fractures.*—An excellent paper on this subject, written with a true philosophic spirit, was read by Dr. Herbert Barker, before the South Midland Branch of the British Medical Association. In the case which formed the basis of his communication, no peculiarity of constitution, hereditary or acquired, could be traced to either parents. The mother had borne three healthy children previously, and has since given birth to a fifth, also healthy. During her pregnancy with the subject of the present case, she had a fall down stairs; but, from reflections on the case, Dr. Barker does not connect this event with the fractures as standing in the relation of cause and effect. The child, when born, lived about ten minutes. On examination, no suture lines could be traced, and no bones could be felt through the scalp. The humerus of both sides, and the radius and ulna of both arms were broken, as were both thigh bones, and both tibiæ and fibulæ. On dissection, all the viscera were found to be in a normal and healthy condition; and the peculiarities of the fœtus were confined to its osseous system. The frontal, both parietal, the squamous portion of the ethmoid, and the expanded portion of the occipital bone, were entirely absent. "The shaft of the left humerus bulged out in the middle into a round ossified protuberance, of the size and appearance of a small bullet; above and below, the shaft was suddenly contracted to the diameter of a crow's quill. There was ossification at these points, but the bone was so fragile that it would not bear the slightest manipulation. Just above the protuberance in this constricted portion, there was a distinct fracture, slightly oblique, but complete. The fractured ends were jagged, and could be refitted into each other." The right humerus was similar in appearance to the left, save being fractured in two places; the radius and ulna were fractured in two places; the ulna of the left side had also been fractured, and again united by cartilage. The left femur had a tuberosity in the middle of the shaft: like the humerus, it was obliquely fractured in two places above the tuberosity, and in one place below it; and when the ends of the bone were fitted together, it had a twisted appearance. The right femur was similarly fractured, but without distortion. The shafts of the tibiæ and fibulæ were fractured in several places. One great

fact with regard to the structure of the bones generally, was their extreme fragility, and the well-marked deficiency of inorganic matter. After carefully burning out all the organic matter, Dr. Barker found the relative proportions to be—

| | |
|---|---|
| Organic matter . . . . . . . | 66.66 |
| Inorganic matter . . . . . . | 33.34 |
| | 100.00 |

Dr. Barker considers the cause of fractures in this case quite compatible with the unusual amount of organic matter, from the fact that the earthy matter was irregularly deposited.

The Doctor then proceeds to consider some analogous cases, as reported by Dr. Moffat, Chaussier, Baudelocque, Arnaud, Carus, Billard, and Dr. Montgomery.

With respect to the cause of these fractures, Dr. Barker thinks, arguing from this case in particular, that the inequality in the deposition of earthy matters, and the disproportion in construction between the organic and the inorganic parts, was the main predisposing cause. In the modulated parts there was an increase of earthy deposit; in the constricted parts the bone was formed, but was too feeble to bear the pressure to which it was subjected.

In the normal state there is more organic and less earthy matter in the fœtal bones: they are, consequently, less liable to fracture than at any subsequent period of life; and especially whilst protected by the mobility of the fœtus in the amniotic liquor. Hence, blows or falls are fortunately comparatively harmless in ordinary circumstances.

Dr. Barker draws two practical deductions from his case. Firstly, with regard to labour; and, secondly, in a medico-legal point of view, cautioning the practitioner never to give evidence with respect to fractures in still, or newly-born children, without having examined all the bones of the body with reference to their physical strength; their osseous development; the presence or absence of certain bones; the presence of previous fracture and reunion; the presence of external injury, and the contour of the bones and limbs generally.

A second case is reported by Mr. Davies, of Pershore, in which the thigh had suffered a compound fracture, the bones overlapping nearly an inch. This was the sole fracture in this case; and the child has since grown to be a man, with arrest of development in the limb, it being now only about a foot long.

A third case, in which a syphilitic taint was present in the mother, who miscarried at seven months, is reported by Mr. Murray. The child lived a few days with the left humerus and left femur fractured: the whole of this side of the body was soft, consisting of loose, unhealthy fat; whereas, the opposite side was in a state of rigidity and atrophy. The state and composition of the bones in this case were not observed.—*Midland Quarterly Journ. Med. Sci.*, Jan. 1858, from *British Med. Journ.*, Oct. 1857.

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64. *Report on Cross-Presentations.* By Prof. Spaeth.—Among the 12,523 births which came under Professor Spaeth's observation while he held the post of assistant accoucheur at the General Hospital, Vienna, 93 cross-births occurred. Cross-presentations were also, besides these, very frequently diagnosed in pregnant women with exactitude, which, on the commencement of labour, were converted spontaneously into presentations of the long axis of the body. In primary cross-presentations—*i. e.*, before the rupture of the membranes, the lateral portion of the child's body usually presented—although, in some instances, the back or the abdomen was found turned towards the os uteri. In the latter cases, the extremities were generally found presenting, and in one instance, both the lower extremities and one of the upper were felt within the os, while the axis of the child's trunk lay completely parallel to the transverse diameter of the uterus. In secondary cross-presentations—*i. e.* the waters being discharged—the fœtus, when normally developed, always presented with its shoulder; of 56 exactly indicated cases, in which the lateral part of the body or the shoulder presented, in 39 the back of the child was placed forward (24

times with its pelvic end towards the left side, and 15 times towards the right side), and in 17 it was placed backwards (11 times with its pelvic end to the left, and 6 times to the right side).

The following may be enumerated as causes of cross-presentations :—

1. *Twin births.* Among the 157 instances of those that occurred, the second child was found in the cross position 13 times—therefore 1 in 12. The first child was always found in the long presentation. 2. *Maceration of the child.* Among 176 macerated children, 7—*i. e.* 1 in 25—presented crosswise. 3. *Premature birth.* Of 655 children born between the fifth and ninth month, and not in a macerated condition, 16 presented crosswise—1 in 40. 4. *Placenta prævia.* In 13 cases of this, cross-presentation occurred 3 times. In these 3 cases, the placenta was always so placed as to entirely cover the os uteri, while this was only found to be the case in 1 out of the other 10 cases. 5. *Relaxation of the walls of the uterus.* Scanzoni correctly considers unusual relaxation of the parietes of the uterus as one of the most essential circumstances in the production of cross-positions ; and it is on this ground that the more frequent occurrence of the position in women who have borne several children, is to be explained. Thus of the 93 cases in question, only 20 (or, of 52 cases not included in the above categories only 10), were primiparæ. Moreover, in the bulk of the great number of cross positions ascertained to exist during pregnancy, but which were spontaneously converted at the onset of labour into long presentations, presented this condition of relaxation, the rectification taking place apparently because the contractions of commencing labour obliged the hitherto relaxed organ to assume its natural form, thereby removing one cause of the faulty position. 6. *Abundant liq. amnii.* This was also often observed in pregnant women exhibiting cross-position. With the great mobility of the fœtus which exists in such cases, it is quite a matter of chance whether the fœtus, during labour, is not found in the cross-position. Among the 93 cases, such excess of fluid was observed in 10, and certainly occurred yet oftener, in certain of the cases brought to the hospital only after the membranes were broken. 7. *The cordiform shape of the uterus*—*i. e.* a slight degree of the *uterus bicornis.* This was observed in one case only, but this was an example of the recurrence of the position in three pregnancies. Braun relates a similar case ; and there is hardly any doubt that this deformity of the uterus, which is as perceptible after the birth of the child as before its expulsion, is a cause of *habitual* cross-position. 8. *Eventration of the abdominal viscera* was observed in 2 cases by the author—once at the hospital, and once in private practice, the child being at about the seventh month in each case.

The course and treatment of the 93 cases were as follow:—

A. *Spontaneous Turning.*—This occurred in one case, that of a woman, aged 24, pregnant for the second time. At 8 A. M. (11th June), the waters were unexpectedly discharged. The os uteri was found relaxed, and the ribs of the child could be plainly felt through it. On external examination, the back of the child was found to be turned forwards, its pelvic extremity lying nearer to the entrance of the pelvis than its head, which lay towards the right side. The uterus was soft, and slight contractions only occurred at long intervals. The patient was kept lying in bed on her left side, and strong pains only came on in the afternoon of the 13th. Under their influence, the pelvic end of the fœtus passed spontaneously through the os, the uterus assuming its normal, longish-round form. At 5 P. M., the living child was born with ease.

B. *Spontaneous Delivery in Shoulder Presentation.*—This occurred in five instances, and these consisted in a fœtus of five months, one of six, two of seven months, and one at full time. The six months' fœtus, and one of those at seven months, were in a macerated condition, and the others died during labour. The first of these cases, on account of the smallness of the child, was left to itself, while the others only came under observation after repeated unsuccessful efforts at turning had been made. The mechanism was the same in all these cases. The shoulder, under the influence of strong pains, was gradually pressed deeper into the pelvis, while the head advanced more and more forwards from the side of the mother towards which it was turned, until at last it lay exactly over the symphysis pubis. At the same time, the trunk moved towards the sacro-iliac symphysis on its side, and was, through the pressure excited upon the buttocks by the fundus uteri, forced down the sacral hollow behind the head, so that first the presenting shoulder, then the under part of the thorax, the buttocks, and the feet passed out, and then finally the head was expelled. The complete extrusion of the shoulder, while the head remained at the entrance of the pelvis, was, however, only rendered possible by means of excessive extension of the neck. Two of the mothers suffered from slight peritonitis, but all recovered.

C. *Turning.*—This was effected in 85 cases.

a. *Cephalic turning.*—Besides the very numerous cases of oblique cranial position in which the head deviating to one side or the other, was directed by manipulation into the pelvic entry, this procedure was put into force in six instances of cross-presentation, the manipulation being external in 2, and internal in 4 of the cases. In the two former, the membranes were as yet unruptured, the uterine walls were relaxed, and the pains unfrequent, while the child was sufficiently movable, without the liq. amnii being in excessive quantity. The woman having been laid on her back, one hand was placed above the child's head, and the other beneath its pelvis, and by simultaneous pressure the one was directed towards the aperture of the pelvis, and the other towards the fundus uteri. As soon as the head had somewhat approached the aperture, its further progress was much favoured by laying the woman upon the side corresponding to that towards which it had lain. The children in both these cases were born alive. In the four cases treated by internal manipulation, the membranes were still entire, and the hand corresponding to the side on which the head lay, was, during an interval of the pains, passed sufficiently high between the uterine wall and the head to enable it to seize the head, and draw it towards the pelvic aperture. This manœuvre was assisted by the other hand, placed externally, either pushing the buttocks up towards the fundus, or aiding in thrusting the head downwards. All the children were born living.

b. *Turning by the buttocks* was executed by external manipulation in one instance, the child being born living.

c. *Turning by one or both feet.*—This was performed 78 times under the following different circumstances:—

1. *Prior to the rupture of the membranes* in 39, 10 being examples of twin-births. The author places the woman on her back, with the pelvis somewhat raised, and introduces the hand corresponding to the side to which the child's feet are directed, when this can be ascertained. But before the waters are discharged, it is indifferent to an experienced practitioner which hand he employs. With the exception of two cases, in which hemorrhage from placenta prævia occurred, full dilatation of the os uteri was always waited for; and the membranes were preserved entire, when possible, until the hand had reached the spot where the feet were expected to be found. They were then broken, and where rapid delivery was required, as in placenta prævia, both feet were brought down, otherwise only one. In the latter case, the labour was then left, for self-completion, unless the state of the pulsation of the funis or other dangerous circumstances called for haste. In all cases, however, the delivery of the head had to be assisted, viz: in 37 by manual interference (a modification of Smellie's method), and in 2 by the forceps. In the 37 cases, there were born 28 living (3 being stillborn but soon restored), 4 dead and 5 macerated children. Of the 4 dead children, in 2 the birth had been preceded and accompanied by severe hemorrhage, in one there was eventration, and one had to be extracted from want of pains. Of the two children delivered by the forceps, one was born alive, and the other in a macerated condition. As unfavourable complications, there were two instances of narrow pelvis, and three of placenta prævia.

2. *After the discharge of the liquor amnii.*—These cases were also thirty-nine in number. The operation was rendered much easier by choosing the hand which corresponds to the side of the mother to which the feet are directed, and which, when the waters are discharged, could always be ascertained. In part of the cases it was introducted in the German method, by passing its volar surface over the abdomen of the child to the feet. In others, the French method was adapted, by which the presenting lateral parts are pushed farther away, and the hands carried over the buttocks to the feet. From the former, none of

the ill effects said to result from compression of the funis or abdomen were found to arise. In difficult cases, great are the effects of a proper position of the woman and choice of the hand, together with carefulness and steadiness in its introduction. By observation of these points, the experienced accoucheur will often succeed after many failures on the part of others. Still, there are cases in which the observation of every precaution is not followed by success, as when the uterus becomes so closely bound round the child by continuous, tetanic contraction, as to forbid the passage even of a quill between them. There are cases, too, in which vain attempts at turning have so excited the uterus as to have aroused the most vehement pains, which follow one after the other in rapid succession. Who, in attempting, under such circumstances, to turn the fast-locked fœtus, would not have the terror of rupture of the uterus before his eyes! It is in such cases that chloroform, or a mixture of chloroform and ether, is of unqualified utility, rectification often becoming possible during anæsthesia, when decapitation would be otherwise unavoidable.

Among these 39 cases of secondary cross-positions there were 10 cases in which turning took place *immediately* after the rupture of the membranes. Of these (1). There were 8 *accompanied by unfavourable complications*, viz: 2 with hemorrhage—one child living, the other dying; 3 with prolapse of the funis—2 living and 1 dying; 1 with the induction of premature labour at the end of the 8th month, the child dying; 1 with very rigid genitals in a primipara, the child living; and 1 with a large headed child, which lived. (2). The other 8 cases were *uncomplicated*, and all the children were born living. Altogether, in the 16 cases, 10 of the children were born living, 4 came stillborn (one of these dying), and 2 were born dead. (b). Cases in which turning was performed *within the first half hour* after the rupture of the membranes. These were six in number, in one of which only the child died. (c). Cases in which it took place at a *later period*, either because the patient came late under observation, or that the waters were discharged prior to the commencement of labour. Of these 7 cases, turning was executed in 4 in one hour, in 1 two hours, in 1 five hours, and in 1 twelve hours afterwards. Two of the children died. (d). In 7 cases the *membranes were ruptured before the commencement of the pains*. In these cases, turning was accomplished after 9, 10, 23, 29, 37, and 64 hours, and in one case the exact time was not known, the child being dead when the patient was admitted. Among all these cases, turning was not attended with any difficulty, except in the first one. The cases under (c) and (d) sufficiently prove that nature usually leaves space enough after the discharge of the waters to admit of turning with success, and without much difficulty, providing always that unsuccessful attempts have not excited the impetuous action of the uterus, which leads either to the death of the fœtus, or renders turning exceedingly difficult or impossible. (e). Cases in which turning was accomplished *after prior unsuccessful efforts*. Of these there were three, and the author relates two others which occurred in his private practice. Chloroform was employed in three of these, and turning would probably have been impossible without its aid. All the children were dead.

Summing up the results of the 85 cross-presentations treated by turning, we find that 66 children were born living (of these 9 were stillborn, 8 recovering, and 1 dying), 13 dead, and 6 in a macerated state. Separating the macerated children, as already dead before the commencement of labour, the proportion of dead to the living children was 1 in 5. Of the mothers, 69 were in good health, 6 recovered after short illnesses, 1 was transferred to the hospital on account of metastasis, and 9 died. It is to be remarked, however, that the confinement of some of the fatal cases took place at a time when a bad form of puerperal disease prevailed. Of the entire number of 12,523 confinements which furnished these 85 cases, 546 women died of puerperal disease, and 73 were removed to the hospital on account of metastasis, eclampsia, &c. Hence the proportion of mortality in the whole was at least 1 in 22.

D. *Decapitation.*—This was performed in two instances, which are related, the children being dead, and the shoulder being so much forced down, and the child so closely compressed by the uterus, as to render attempts at turning dangerous. Braun's modification of Smellie's hook was employed.—*Med. Times and Gaz.*, Jan. 9, 1858, from *Wien Wochenschrift*, 1857, Nos. 8, 9, 10.

# AMERICAN INTELLIGENCE.

## ORIGINAL COMMUNICATIONS.

### *Singular Result* [*Thrombus*] *of an Injury in the last Stage of Pregnancy.* By Bedford Brown, M. D., Yanceyville, Caswell Co., N. C.

I was called early on the morning of July 18th, 1857, to visit Mrs. P., in consultation with Dr. Roan, of this place. Dr. Roan informed me that he had attended Mrs. P. the previous evening in a premature confinement, which, for a primary labour, terminated readily, and with but little difficulty. After leaving his patient comfortable, and with a good prospect of an early recovery, he returned home, but not many hours after was summoned again in great haste to Mrs. P.'s bedside. He found her suffering most excruciating pains in the left iliac and inguinal regions, radiating over the back, hip, and thigh, in addition to which, a most intolerable strangury existed. The Dr. remained with her during the night without being able to mitigate her sufferings, which were so great as to produce extreme constitutional depression. On making a vaginal examination, early the following morning, he found a considerable elastic tumour occupying the left side of the pelvic cavity, between the walls of the vagina, the pubis and the ischium, and beneath the deep pelvic fascia.

On my arrival, the dimensions, location, sensibility, &c., of this tumour, were accurately examined by both of us. Dr. Roan thought it had evidently increased in size since his previous examination. The increase during the two succeeding hours was very perceptible. The patient was rapidly sinking, with an exceedingly quick and feeble pulse, blanched complexion, cold perspiration, and her sufferings were on the increase. In fact, the case presented all the indications of utter hopelessness.

In consultation, the first subjects for inquiry were the cause and nature of this novel and most extraordinary formation, which had appeared since delivery. Mrs. P.'s mother informed us, that the day before her daughter's confinement, in attempting to get over a fence, she slipped and fell to the ground alighting on both feet; the shock being very considerable. Immediately after the accident, she felt a sudden pain in the left iliac region, attended with a peculiar sensation, as if the parts beneath were torn apart. Many and various ideas suggested themselves to our minds, as the probable cause of this tumour. First, was it a retroverted womb? The uterine globe being still above the pubis, satisfied us on this point. Could it be a large hernia? The tumour being smaller in the beginning, but having gradually and progressively increased, the torture and pain increasing in intensity with it; the great elasticity of the swelling, as if due to fluid contents; the perfect freedom of the intestinal canal from obstruction or disturbance; all united to discourage that opinion. In fact, the sudden appearance of the tumour after labour; its progressive increase; the characteristic pain in the pelvis, as if the tissues were being torn and riven asunder; the great tension and elasticity; the peculiar pain at the time of the accident, led us to believe that one of the deep-seated vessels beneath the pelvic fascia had been ruptured by the jar which Mrs. P. sustained, that a slight effusion of blood followed, a coagulum formed and sealed up the orifice temporarily. But labour being hastened by the accident, opened the bleeding orifice afresh, and gave vent to a large quantity of fluid blood, which, continuously escaping, made its way under the deep fasciæ of the pelvis, and between the walls of the vagina, rectum, and the left ischium and pubis, and part of the sacrum. In fact, the growth filled the whole pelvic cavity as far as the brim, pushing the uterus and bladder entirely above the upper strait. Concurring in this opinion, it became necessary to devise some means by which to arrest the alarming internal hemorrhage, and thereby put a stop to the growth of this tumour.

Mechanical means being of no avail here, we selected the gallic acid, as probably being one of the most effective internal hemostatics, in scruple doses every hour. In the mean time, the patient was put under the influence of powerful anodynes, to relieve pain and constitutional suffering. This treatment was energetically persevered in until evening, when the hemorrhage appeared to have been arrested, as the tumour ceased to increase. The anodynes had greatly relieved her sufferings, and though the abdomen was exquisitely tender on pressure, she was tolerably comfortable, but greatly prostrated; evidently more from loss of blood in the pelvis, than the attending pain.

For the next fortnight, Mrs. P. suffered from occasional severe paroxysms of pain and a low form of remittent fever, which quinine and tonics ultimately relieved. After this I saw nothing more of the patient until some six weeks had elapsed, when her husband requested me to visit and examine her, as the pelvic tumour had given her more pain than usual of late, and she thought probably something was escaping from it. On examination, I discovered a fistulous opening, caused by ulceration, leading through the walls of the vagina into the most dependent part of the tumour; through which, by means of pressure, I forced out a large quantity of grumous blood. Thus in the end verifying our original diagnosis. After this, the patient under a tonic treatment recovered her usual health.

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*Tumour occurring thirty-six hours after Delivery.* By J. Marcus Taylor, M. D., of Mississippi.—I received a message on the 27th November, 1857, to visit Mrs. N., an extremely feeble and delicate lady, in labour with her seventh child; but did not see her until about three hours after delivery. The labour was natural, and the child was received and separated by a female friend, who happened to be present. The placenta was expelled soon after the child, and removed by the same lady. When I arrived I was apprised of the above facts, and finding the lady suffering very severe after-pains, and otherwise apparently doing well, I prescribed ʒj tinct. opii camph., to be repeated as needed, gave the usual directions for the lying-in, and left. On the night of the 28th I was called to see my patient in haste on account of a tumour presenting itself at the vulva. On making an examination, I could detect nothing at all corresponding to the description given me by the lady and her friends. Mrs. N. informed me that while pressing on the tumour with her hand it disappeared, and she supposed it to be the womb which she had replaced *in situ naturale.* She was yet suffering considerable after-pains, but being able to discover nothing abnormal, I reassured her, gave a dose of morphia and Hoffman's anodyne, and retired for the balance of the night. Very early in the morning, I was invited into the sick room to witness the same difficulty for which I had been called in the night. On examination this time, I found a tumour protruding at the vulva as large as a man's fist, very smooth, round, and of a pear shape; the large extremity or base presenting.

I at first suspected inversion of the uterus. The size and shape of the tumour; the general debility and want of tone in the muscular system of my patient, and the unusually severe after-pains, all conspired to lend force to that view; but the smooth, serous surface of the tumour, and the absence of any *cul-de-sac* around its neck, satisfied me at once that such was not the case. And on making slight pressure with the ends of my fingers, the tumour presented a boggy feeling, from which I inferred that it was a sac filled with some semi-solid matter.

With very slight traction efforts, I removed the whole mass, which proved to be a portion of the fœtal membranes, about eight by twelve inches, when spread out. Its internal surface being concave, served as a receptacle for the blood in its exit from the uterus, and when removed it was filled with firm coagula.

The pressure exerted upon the tumour by the hand of my patient before my arrival, caused the blood contained in it at that time to escape around the loose margin of the membrane, after which the sac collapsed, and lying close upon the walls of the vagina, was not detected in my first examination; and the membranes remaining in *statu quo*, refilled, and thus reproduced the tumour.

RIENZI, MISS., *January* 7, 1858.

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*Case of Poisoning by Laudanum; Recovery.* By THOS. J. GALLAHER, M. D., Pittsburg, Pa.

On the evening of the 15th of January of the present year, I was called to a female who was said to be extremely ill from having taken two ounces of tincture of opium for the purpose of committing suicide. The patient was a woman of loose character, about 28 years old, short of stature, very lusty and obese, and much addicted to the use of intoxicating beverages. As she was not seen until the poison had been drank one hour and a half, of course it had full time to exert powerfully its toxical effects upon her.

She was lying upon her back on a sofa in a state of perfect coma; the insensibility being so complete that ice water dashed violently into the face produced not the least evidence of sensibility, nor contraction of any of the voluntary muscles. The lips were livid; surface of the body cold and bluish; limbs relaxed; pupils contracted to the size of a pin's head, and immovable to the impressions of light; eyes everted, fixed, and strongly congested; eyelids closed; carotid arteries beating violently; respiration slow, laborious, stertorous, and very irregular, sometimes more than a minute would intervene between the respirations, when inspiration would suddenly occur accompanied with a loud and disagreeable snore; and the pulse was slow, irregular and feeble. From these symptoms and the history of the case I was convinced that she had taken laudanum, and was then suffering from the poisonous effects of that powerful narcotic. A dose of tartar emetic had been given her by one of the inmates of the house in which she lay; but as the stupor came on her before it had time to operate, emesis was not produced.

The treatment adopted was prompt. By the aid of a stomach-pump the stomach was soon relieved of its contents, and well washed out four or five times, with tepid water. The material raised from the stomach gave by its colour and odour unmistakable evidence of the presence of a considerable quantity of laudanum and whisky. The head was then directed to be somewhat elevated, and two mustard cataplasms—one to the epigastrium and the other to the space between the shoulders—were ordered to be applied, and permitted to remain till redness of the skin was produced. In a short time, symptoms of improvement became apparent; the pulse became fuller and more regular; the respiration more regular, and the extremities slightly warmer. In two hours she was again visited, but as there was no further improvement, bloodletting was determined on. Failing to procure the requisite quantity of blood from either arm, on account of the exceeding obesity of the patient, the temporal artery was punctured, and several ounces of dark blood, much resembling that usually found in the veins, obtained. Some time afterwards a severe convulsion occurred, but this was of short duration. During the night an occasional sinapism was applied to different parts of the body, fresh air freely admitted, and heat applied to the extremities. Before morning a messenger came to inform me that she had revived from her stupor and become sensible, and was then very thirsty. Cold water in small quantities was permitted.

In the morning I visited her, and was pleased to find her quite free from coma. She complained, however, of headache, thirst, and vomiting, and an intolerable itching of the skin. Remedies were directed for these disagreeable symptoms, when, in a few days, I had the satisfaction of seeing my patient quite restored to her usual health.

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*Case of Hernia.* By Robert Lane, M. D., Sutton, New Hampshire.

Mrs. B., a matron of 50, large and muscular, has had femoral hernia three or four years; thinks the tumour has been constant for the last two years; has suffered but little inconvenience from it till the evening of the 10th Nov. 1857, when she was attacked with symptoms of strangulation. Hot applications were made to the tumour, a physician called at 12 o'clock, who endeavoured by manipulation to reduce the hernia, but not succeeding, applied ice to the tumour, and gave morphia freely. I first saw her at 12 M. on the 11th; the pain and vomiting had subsided; there was an elastic tumour of the size of a butternut, with a thickening and hardening of the cellular substance around it an inch and a half broad from the elastic part of the tumour. No increase of pain that afternoon; enema given in the evening produced free evacuation.

*Nov.* 12, 10 A.M. Has rested well through the night; the tumour has an odd doughy feel, different from the elasticity of yesterday; free from pain when still, but complains of soreness on motion.

18*th.* Called again; patient restless with pain in the abdomen; erythema three or four inches broad, extending nine or ten inches up and down over the tumour; vesication of the tumour; gave opium and enema with a mild laxative.

20*th.* The laxative operated freely; less inflammation on the surface of the abdomen. The true skin on the tumour so dead that I removed an elliptical portion with the forceps and fingers, about one and a half inch long, by three-fourths of an inch wide; under this I found a portion of gangrenous intestine; raising this with forceps, one end separated, which was brought out of the ulcer and clipped off with scissors, so as to take out one and a half inch of intestine containing a portion of green vegetable. The part of the intestine cut off was open so as to pass the finger in it into the abdomen, the ulcer extremely fetid. Gave bark and opium; enema and laxative.

22*d.* A small quantity of fecal matter discharged from the ulcer, with free discharges per anum. Pain and tenderness with other symptoms of peritoneal inflammation; in two days these symptoms have subsided. Gave opium and bark.

25*th.* Removed about an inch and a half more of the intestine; less fecal discharge from the ulcer; fetor abated.

28*th*. Natural discharges from the bowels, kept free by mild laxatives and enema. Gave bark and opium; ulcer filling up with healthy granulation; still a little fecal discharge from it every day.

*Dec*. 2. Patient improving; continue the same treatment. From this time no unpleasant symptoms, except from confinement. A small quantity of fecal matter discharged from the ulcer till the first week in February.

1858, *Feb*. 14. The ulcer healed; the patient up about the house.

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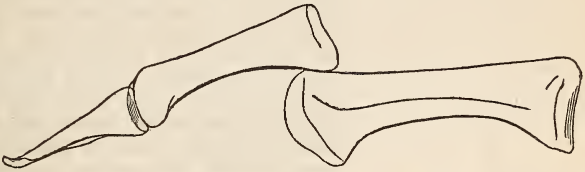
*Dislocation of the First Phalanx of the Thumb upon the Dorsum of the Metacarpal Bone.* By Benjamin Cutter, M. D., of Woburn, Mass.[1]

This dislocation is generally caused by a severe blow received on the end of the thumb, when the arm is extended to save one's self while falling. The phalanx is forced backward upon the metacarpal bone, and firmly retained there by the lateral ligaments. But should the phalanx be forced *beneath* the metacarpus, it is easily replaced. On looking through authors on dislocations, both ancient and modern, mention will be found of great difficulty in treating this dislocation, and no easy method of reduction suggested. Many powerful instruments for traction have been devised, and cases of tearing off the member have been reported. In order to get a secure hold upon so small a limb, it has been usual to protect the thumb with a covering of soft leather, over which a strong tape is secured with a clove hitch so tightly drawn as to prevent slipping, and to which manual or mechanical power may be attached—such as the pulley, Jarvis's adjuster, &c. Many other ingenious contrivances, to secure certain hold of the member and make extension, have been made and recommended—such as Charrière's modification of Luer's pronged forceps; Levis's apparatus (see *American Journal of the Medical Sciences* for January, 1857); the "Indian puzzle," recommended by Dr. Hamilton, of Buffalo; Vidal's method with a common door key, advocated by Roux and many French surgeons, &c. &c.



Dr. William Hey, of Leeds, a fine old English surgeon of the last century, and an eminently practical one, acknowledges from experience that "the reduction is in some cases extremely difficult, if not impracticable;" and it is noticeable that he mentions no cases where he was successful. (See *Hey's Surgery*, p. 206.) Many cases, after vain attempts, have been left unreduced, and the patients have been obliged to submit to the inconvenience for the rest of life, unless the division of one of the lateral ligaments, or the resection of the end of one of the projecting bones be made, both of which operations are reported.

*The aforesaid devices and advices are all wrong, because unnecessary. There is a better way.* For several years past, Professor Dixi Crosby, of Hanover, N. H., has been accustomed to describe the accident and its treatment in his medical lectures, so that the medical profession in New England are generally familiar with his method. Drs. Doe and Morgan have published articles relating to it; Dr. Crosby has not. From one of his pupils, I learn that, some years ago,

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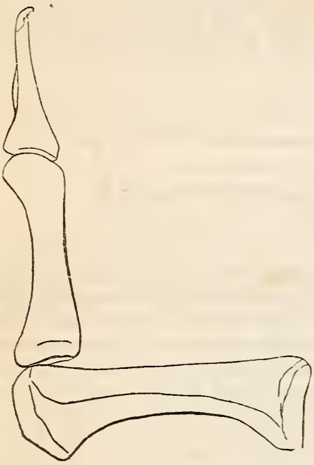
[1] An account of this method of reducing dislocation of the first phalanx of the thumb, upon the dorsum of the metacarpal bone, has already been published in our esteemed contemporary, the *Boston Med. and Surg. Journ.* (No. for Oct. 1, 1857), but we are induced to insert it here, as it has been communicated to us by Dr. Cutter, with corrections, and an important addition.

Prof. Mussey had a case in which all the usual appliances were employed without success, and resort was about to be had to the knife for the division of one of the lateral ligaments, when Prof. C. was permitted to try a method which had suggested itself as feasible in such accidents, and it succeeded admirably. Prof. C. remarks in his lectures, "that he has never failed in the *many* cases which have occurred in his practice, although in several instances all other methods usually adopted had been tried without effect." And "in his opinion, this method is equally applicable to similar dislocations of all the phalanges." I have verified this last opinion in one instance, the only one I have met with.

Case first occurred about six years since; the subject an Irish lad, about 8 years old, with his *left hand thumb* dislocated. After some ineffectual attempts to reduce it by his parents and neighbours, I was called. Having a general idea of Dr. Crosby's method, I proceeded to put it in practice. I placed the patient in a common chair, and took a seat in another at his side, both of us facing the same way. An assistant sat behind us, to hold the boy's elbow fixed. I then took hold of the metacarpal bone with my right hand, my forefinger passing between his thumb and forefinger, and my thumb resting on the top of the metacarpal bone, with its end touching the dislocated end of the phalanx. With my left hand I tipped the phalanx back, until it stood perpendicularly on the metacarpal bone; then pressing the phalanx forward by the end of my right thumb, it was readily carried by flexion into place, and the joint restored to its natural condition. The manipulation was performed in a twentieth part of the time taken to describe it. A bandage was applied for a few days to prevent displacement, and some evaporating lotion to subdue inflammation.



About the same time another similar accident occurred in an adult, an officer in the Customs, which, in my absence, was treated according to the same principle by my friend Dr. Rickard, and with equal success.

The next case, and which is the occasion of this paper, occurred in S——. The subject, a young girl about thirteen years of age, had the first phalanx of the *right* thumb dislocated on the back of the metacarpal bone. Dr. G., an irregular practitioner, was called, and failed in his attempt to reduce it. She was then taken to my friend, Dr. S., who sent her to me about the middle of one of the most rainy nights last month. As she had suffered considerably in the attempts to reduce the dislocation, she and her friends insisted on using some anæsthetic, and, although I considered it unnecessary, she was gratified. As it was the right thumb that was injured, I seized it with my left hand, the forefinger underneath, and my thumb on the back of the metacarpal bone. With my right hand I tilted up the phalanx, until the end of the joint rested upon the metacarpus; then pressing it forward with the end of my left thumb, I flexed the phalanx into line and place with ease.

I have recently received, at second hand, from Prof. Crosby, a letter in which he briefly states his claim, as the inventor of this process of reduction by manipulation; and as it is well to fix the paternity of it on the proper person, I append it.

Hanover, N. H., *Feb.* 4, 1858.

Dr. R., Dear Sir: Yours of the 30th is received, and I have to thank you for the interest taken in the matter of dislocation. Dr. C. has stated the thing so, that I doubt the propriety of adding anything to his article at present. I would suggest that you may emphasize the fact *that I discovered this method as early as* 1826. My first patient was a little boy, the son of Mr. Francis Ayers, of Gilmanton, N. H. I had assistants for several hours, while I was trying extension by the "clove hitch." At last I resorted to the method which I now use and recommend in my lectures, with complete success. I came to Hanover, Sept. 15, 1838, and, in a few days after, one Sunday afternoon, at the Dartmouth Hotel, I accomplished the reduction on a patient of Prof. Reuben D. Mussey, by the name of Williams. I refer to Dr. Mussey, now of Cincinnati, to corroborate. The first published case was by Dr. Arnold Morgan, of Canaan, N. H., who was my pupil, and derived the information from me in a course of private instruction, and who was afterwards my assistant in business. In a great number of these cases that have occurred to me, I have never failed to effect the reduction in a single instance. I can, moreover, bring forward at this time several parties, on whom I have practised this operation, since I hit upon it, in 1826. It is a very simple matter, but of incalculable benefit to any unfortunate who happens to have this luxation.

With regard, I remain yours, &c.,
DIXI CROSBY.

## DOMESTIC SUMMARY.

*Dislocation of both Thighs—one into the Foramen Ovale, the other on the Dorsum of the Ilium, with Fracture of the Cervix Femoris.*—Dr. J. Mason Warren communicated to the Boston Society for Medical Improvement the following interesting case: The patient was brought into the Massachusetts General Hospital, having been crushed by the giving way of a wooden house, which he was engaged in moving, being struck upon the back as he was making the attempt to escape. The right leg first attracted attention. The thigh was fixed, slightly flexed on the body, standing off from it, the foot presenting nearly forward, the limb apparently elongated. A deep hollow was felt in the region of the trochanter, which had itself disappeared. The man being etherized, and the pulleys adjusted, a gradually increased force was applied to extend the limb. A sheet was now placed under the upper part of it, and an assistant, standing on the table, directed to lift the limb. A slight rotation was now made to disengage the head of the bone, and it went into its place without any perceptible noise or action of the muscles.

The right limb being replaced, it was now perceived that the left limb was distorted, and presented all the signs of a dislocation upon the dorsum ilii. It was firmly fixed, shortened, the toes everted and resting upon the upper part of the other foot. The trochanter was prominent, and drawn up from its place to within about three inches of the crest of the ilium. On making an effort to move the limb, an indistinct, but very decided crepitus was perceived.

The pulleys being adjusted, and a fresh dose of ether administered, the limb was slowly and with much difficulty drawn down, a slight rotatory motion being given to it when the head was on a level with the socket. It went into its place with a loud crack, which was heard by all the assistants. The limb now appeared, at first, to have regained its natural condition. As the effect of the ether upon the muscular system subsided, the limb gradually contracted, and the foot became slightly everted. An examination now being made, by rotating the limb, and placing the finger on the trochanter, it was perfectly evident to all present, that there was a comminuted fracture of the thigh-bone, passing through the trochanter. The two limbs were therefore confined—the right one by a weight attached to it, and a cradle placed over it. To the left, Desault's splint, as used at the Hospital, was applied. In addition to the above injuries, there was a fracture of two or three ribs on the left side.

The best explanation of the appearances offered by the left limb is this. The violent crushing force dislocated the femur, at the same time breaking the neck of the bone. The separation of the parts was not, however, sufficient to prevent them from being replaced, but the fracture was made complete, on the bone being returned to its socket.

The subsequent history of this case is not without interest. The patient, from the time of his admission, had complained of his chest, where, it may be remembered, one or two ribs were broken. Suddenly, one night, great difficulty of breathing came on, and, upon examining the chest, it was discovered that a congestion of the posterior part of both lungs had taken place, such as has before been observed at the Hospital, in patients who for a long period of time have been confined on the back, without movement, after serious injuries to the lower limbs. From this affection he very gradually recovered.

At the end of two months, he left the Hospital well. The motion of the right limb was natural. The left leg was a little shortened. The motions of the hip-joint were limited; on examination, the trochanter was found irregular at the point of fracture. As it had been thought possible that the head of the femur might have been left on the dorsum of the ilium when the complete fracture of the limb took place, search was made for it, but it could not be found there.

In this connection, Dr. Warren mentioned the following case of dislocation, and which was interesting in a practical point of view. A man was brought into the Hospital with a dislocation on the dorsum ilii, which was caused by a wagon passing over him, the limb being at a right angle with the body. Ether was given, the pulleys applied, and the dislocation reduced. On raising the limb slightly, to examine it, it at once slipped out of place, and was reduced again with some difficulty. This experiment was once or twice repeated, with the same result. Dr. Townsend, who saw the man, verified the fact. Slight, though not very marked crepitus attended the movements of the joint. From fear of displacement, and with the idea of a fracture of the edge of the upper and back part of the cotyloid cavity, the limb of the patient was kept rigidly confined in Desault's apparatus, and his desire to return home resisted. The precautions taken in this case were afterward shown to be not without reason. About three weeks after the accident, Dr. W. being out of town, the patient got out of bed, and while resting on the injured limb, attempted to turn around, thus giving a slight twist to the hip-joint. The bone immediately slipped from its socket. This accident afterward, in the course of the next week, recurred a number of times from simple motions made by the patient while in bed. It was then determined to put on a permanent splint, and allow it to remain on for several months. This had the desired effect, and the patient was seen by Dr. W. some months after leaving the Hospital; the joint was then slowly regaining its mobility.—*Boston Med. and Surg. Journ.*, Jan. 14, 1858.

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*A Simple and Efficient Bandage for Fracture of the Clavicle.*—Dr. Julian Chisolm describes (*Charleston Medical Journal*, March, 1858) a simple, and what seems to be, at the same time, a very efficient bandage for fracture of the clavicle.

The bandage is formed of a strip of cloth from three to five feet long, and from eight to eighteen inches wide (according to the size of the patient) which is slit from both ends in such a way as to leave a bridge from one to two inches wide in the centre, connecting the two lateral half strips. A soft pad having been placed in the axilla, to act as a fulcrum upon the riding fragment, the affected arm is carried over the chest, the palm of the affected hand resting upon the side of the thorax, under the border of the opposite armpit. This position of the arm removes all deformity, and brings the fragments in apposition. The centre of the bridge of cloth is now placed under the elbow, the superior strip, which covers half the height of the affected arm, is made to en-circle the chest; one end is carried forward, the other backward, to meet the opposite armpit, where, after enveloping the hand, and being firmly drawn upon the affected arm, they are secured with needle and thread, pins, or an ordinary knot. The inferior strap, which is placed under the affected arm as a sling, is made to traverse the chest in the same way, the ends meeting over the opposite shoulder, where they are secured by the same means. If at the several points where the strips cross each other, a stitch or a pin is placed, the result will be a firm casing, which, even in the most restless child, cannot be disarranged. The needle and thread is by far the preferable mode of completing and sustaining the adjustment, as the stitches are not apt to be interfered with by the patient or friends; pins, on the contrary, are often tampered with, particularly if there should be any restraint from the bandage. As the material is quite soft, no binding nor excoriations are produced. The bandage supports the entire limb in an easy position, and clasps the arm sufficiently to prevent injurious motion, without being irksome to the patient. It requires no constant renewal, as one single application, if carefully made and properly secured, can be worn until the cure is perfected.

Dr. C. says he has used this simple contrivance for several years with satisfaction.

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*Some Remarks on Cataract.*—Dr. C. S. Fenner, of Memphis, Tenn., in a recent paper, under this caption (*North American Medico-Chirurg. Review*, Jan. 1858), makes the following remark in regard to the operation of couching, which, we think, for the credit of American ophthalmic surgeons, ought not to be allowed to pass without notice.

Dr. F. states: "When the cataract is hard, couching is the operation generally preferred by American surgeons, although by most English and German authors, it is placed in the lowest scale."

We feel quite sure that Dr. F. is mistaken in supposing that American Ophthalmic Surgeons differ from their brethren in England and Germany, in their estimate of the operation of couching; indeed, the very few in this country who practise or advocate that operation, constitute the exception, not the rule.

Mr. Dixon regards depression "as an unscientific and destructive operation," and the same opinion of it is expressed in the last American edition of *Lawrence's Treatise on Diseases of the Eye* (see p. 723). Mr. Walton and Dr. Mackenzie both hold similar views in regard to it (see *Ibid.*, p. 723 and 724).

Dr. Fenner, candidly admits, that his "own experience in displacement has not been so favourable as that reported by some American Operators."

And he goes on to state: "In my operations for cataract by displacement, I have often had to combat a subacute chronic internal inflammation, sometimes coming on several weeks after the operation, and seemingly induced by atmospheric influences. The presence of a hard lens in the vitreous humour in some instances causes irritation, followed by slight redness of the conjunctiva, inability to bear light, increased secretion of tears, a sensation of fulness in the eye, soreness to the touch, and pain at times extending to the terminal branches of the fifth pair of nerves. Iritis may supervene with effusion of lymph in the pupil, but generally the pupil remains clear, the vision gradually fails, until the eye becomes almost amaurotic. I have had this result to occur most frequently in delicate, aged females. Mr. Lawrence remarks that "internal inflammation commencing in the iris, and proceeding slowly, is a common occurrence after depression;" and Mr. Mackenzie, that "chronic inflammation of the internal textures of the eye is a frequent consequence of depression or reclination. It is not attended by much pain, but prevents the eye from ever attaining a degree of healthiness sufficient to render it useful. The patient, perhaps, retains a considerable degree of recovered sight for some weeks after the operation; but epiphora, varicose dilatation of the external bloodvessels of the eye, and in general a contracted, but sometimes a dilated pupil supervening, the sight becomes weak, and in a few months is extinguished." I have repeatedly had cataract patients return to their homes able to see to read fine print with ease, yet in a few months scarcely able to walk about, and I have witnessed the same final termination in those who have been operated on by experienced surgeons of the North and East; they returned home with good vision, but this gradually failed them, until they became amaurotic. Such being the occasional result, no case of cataract should be reported as cured, unless the state of vision is known six or twelve months after an operation; and if operators would keep their patients in view for that length of time, the final result of their operations, I am inclined to think, would not be so favorable as they sometimes report.

Every ophthalmic surgeon who has carefully watched the results of the operation of couching, has observed the same unfortunate consequences as those described by Dr. F., and this so very frequently, that couching has now few, if any advocates, anywhere among prudent and conscientious ophthalmic surgeons. Dr. F. is perfectly correct in his opinion, that no cataract should be reported as cured until the state of vision is known twelve months after the operation.

It is to the practice pursued by some surgeons, of hastily reporting their cases, before the ultimate result can be determined, that so much false glare has been thrown around operative surgery, and such erroneous estimates been made of the value of certain operative procedures, and which has in the present case, as we believe, misled Dr. Fenner.

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*Thrombus of the Vagina.*—Dr. Boisliniere lately reported to the St. Louis Medical Society the following interesting case of this rare accident:—

The patient, a primipara of leucophlegmatic habits, with a normal pelvis, after an ordinary labour, ending with rather severe expulsive pains in the birth of a living child, was left comfortable, when, an hour and a half after, he was called to see her in haste. He found her in the greatest suffering, crying loudly and assuring those around her that this was ten times more severe than her labour pains. She complained then of a burning sensation in the vulva, and a severe bearing down on the rectum, which gave her a pressing inclination to go to stool. She suggested that it was piles. This pain was so agonizing that she had no words to express it. In fact, she could hardly utter two words in succession. This appeared to him the more strange from the great fortitude she had shown during her labour. Dr. Boisliniere confessed that he fell here into the same error committed by Dr. McBride in a similar case, and that he took this at first to be one of those violent tenesmic pains that are experienced sometimes after labour, when the child's head has quickly and violently swept over the vagino-rectal septum—a sort of severe spasm—and he ordered opium suppositories, and hot fomentations to the parts; the latter, as proved on trial, only aggravated the evil; the pain continuing to increase instead of abating. He made then a vaginal examination, which revealed to him the true nature of the complaint—it was a very large thrombus, beginning on the left side, ascending along the side of the pelvis as high up as the finger could reach, filling the whole of the vagina, so that the finger could with difficulty only be introduced, and descending as low down as the left labium, where it was characterized by great hardness and elasticity. This tumour was rapidly enlarging—he could ascertain this by keeping the end of his finger on its surface—the patient was in the greatest agony, her pulse was getting quick, her countenance anxious and distressed. There was only one course to follow—Dr. Boisliniere, under these circumstances, availing himself of the great experience of Dr. M. M. Pallen in matters of this sort, sent for him, and it was decided to open the tumour largely at once. Dr. Pallen then incised the tumour which was projecting and bluish—his incision extended to three inches in length and reached the cavity of this thrombus, after which he emptied it of the coagula it contained, except the most adherent at the bottom for fear of inducing hemorrhage, and a sponge was introduced in the vagina to act as tampon. The patient was immediately relieved and recovered well. The amount of clotted blood extracted must have been several ounces.

Dr. Pallen said, that the case related by Dr. Boisliniere was a very interesting one; interesting on account of its rareness, and on account of the fatality often attending them. He believed that the first published case in British midwifery, was that of Dr. McBride, which occurred in 1776. It had however been observed before. Since then, it has been noticed and described by various writers. Dr. Denman saw three cases, and all recovering, he was induced to think that the disease was devoid of danger; subsequent experience has, however, shown that he was mistaken—death has frequently occurred.

This disease, which consists of an effusion of blood into the areolar tissue, may be in one or both labia, may extend into the pelvis, and into the perineum.

It doubtless, sometimes, occurs in the unimpregnated female; but it is usually an accompaniment of labour, appearing either during its progress, or soon after. The swelling of the labia, and the feeling of weight, are succeeded by great pain. If the distension be very great, the pain is agonizing; fever of an active kind ensues, and even delirium. The patient can only lie on her back, with her thighs widely separated. The tumour is of a livid colour, almost black, and is extremely tender.

Dr. Pallen added, that there could be no doubt that the effusion arose from rupture of some vessel. In a state of pregnancy, the vessels are in a varicose condition, and their rupture easily produces a large discharge of blood. What particular bloodvessel is ruptured, is not determined, probably the pudic vein.

"If the tumour," said Dr. P., "occurs before delivery, and increases slowly, and does not interfere with delivery, it might be trusted to nature. If it increase rapidly and interfere with labour, it ought to be laid open, and the coagula turned out. The same rules apply to the treatment, if it occur after delivery. If it be of slow formation, and not large, the application of cold cloths is all that is necessary; but if it form rapidly, and the pain is great, then we ought to cut it open, turn out the coagula, leaving those which are entangled in the areolar tissue, as they will tend to prevent further bleeding. This being done, the tampon should be used, to produce pressure on the bloodvessels.—*St. Louis Med. and Surg. Journal*, Sept., 1857.

*Fatal Asphyxia from Imperfect Combustion of Gas.*—The case of a gentleman found dead in his bath-room, and whose death was attributed to inhaling air rendered impure by a gas stove used to warm the room, was a short time since communicated to the Boston Society for Medical Improvement. The Society appointed a committee to investigate the circumstances, and in a recent report (*Boston Med. and Surg. Journal*, March 18, 1858) made to the Society, the committee express the opinion that an adequate and sufficient cause of the fatal result in this case is found in the deleterious products resulting from the imperfect combustion of coal gas.

The following account of an experiment upon a cat, placed in a room with one of the gas stoves, was read to the Society by Dr. Ellis:—

"The cat was placed in an iron grated cage, elevated two and a half feet from the floor, the room being eight feet square and ten feet high. The thermometer indicated 90° when taken out. The first thing noticed was a snapping of the eyes, then a crying (as is frequently heard in the night from cats), this becoming, in fifteen or twenty minutes, pretty loud. In a short time this crying stopped. The mouth moved, but without any noise. She sneezed fifteen or twenty times, and rubbed the nose and face with her paw; afterward tried to bite the iron grating of the cage. There was a flow of watery fluid from the mouth, but without any frothing. The mouth was open most of the time. While lying down she would try to get up on her back legs, and would fall over immediately. In thirty minutes there was a tremulousness and throwing back of the head. The respiration became long and stertorous. Convulsive movements came on about the epigastrium, which increased over the body generally, and in forty-eight minutes the animal was dead."

We trust that this very conclusive experiment will tend to awaken the profession and the public to the incalculable importance of free ventilation, and the employment of proper means for warming our houses; and that gas stoves, air-tight stoves, and many like economical means of warming—economical of the purse, at the expense of comfort, health, and duration of life—will be banished from our dwellings. Every means of warming which is not combined with ventilation—in which there is not a full supply of pure, atmospheric air, at not too high a temperature, combined with its entire and constant renewal—

is deleterious to living beings; it is productive of discomfort—sickness, and tends to shorten life.

The claims of the stomach for food are universally admitted, but those of the lungs for fresh air are almost as generally ignored, though the functions of the latter are no less essential to life and health than those of the former. Every human being requires eleven cubic feet of fresh air per hour for respiration, and, if this be not supplied, the blood becomes deteriorated, which is followed by an impairment of all the vital functions, and ultimately their cessation.

*Inverted Toe Nail treated without Operation.*—Dr. Robert Campbell states (*Southern Med. and Surg. Journ.*, Feb., 1857) that, dissatisfied with the operation for evulsion of the nail, which he has long deemed, and very justly, we think, an unwarrantable measure of torture, he was lead to devise some expedient which might answer the indication *of keeping the nail apart from the irritated flesh.* Whilst treating a severe case of inverted toe nail, in 1851, he tried an apparatus which gave him so much satisfaction, that he has adopted it in all cases since.

"This apparatus is formed of a bandage somewhat broader than the length of the nail—say ¾ths of an inch and 1½ yard long, having a roll at one end about ¼th of an inch thick, to be used as a compress, to which the last turn of the bandage is tacked, to prevent the disposition, otherwise, to unroll on traction. This compress is applied in the groove, between the flesh (which is generally much enlarged) and the nail. The margin of the compress, at which the last turn of the bandage is sewed, must present always upward and opposite to the direction in which the pressure is to be exerted—*i. e.*, if the outer border of the great toe on the right side is affected, the seam should be directed upwards and towards the left side of the patient. Thus applied, the bandage will become somewhat wound around the outer side of the compress, which is to be pressed, at first, very gradually and tenderly, but somewhat forcibly, downwards and outwards, until secured in that position by several turns of the bandage around the great toe, carrying it first down, between that member and the second toe, and around several times. The great toe is then to be depressed and forced outwardly, under the second, which is placed upon the compress, and lightly bound in that position by a few turns of the bandage.

"The bandage should be re-applied, at least as often as once a week. If the prominence of flesh, against which the compress is to rest, is very irritable, a layer of lint, anointed with simple cerate, should intervene. At the first impression of the compress to the sore flesh, the patient experiences some degree of pain or soreness; but the very prompt abatement of suffering following the relief of the inflamed tissues from the irritation of the sharp nail, and also the diminished turgescence of the part, induced by the uniform pressure of the compress and bandage, will prove an ample recompense. The comfort of the patient and celerity of recovery are much enhanced by keeping the limb in an elevated position. It is a matter of surprise, bordering upon astonishment, to see the great diminution of sensitiveness in the part, at each succeeding application of the apparatus. Six or eight weeks is time sufficient for relief, generally, or for such an improvement as to render it safe to intrust the case to the care of the patient."

A much simpler plan, and one we have pursued for twenty years, and which perfectly fulfils the indication of keeping the nail apart from the irritated flesh, is to introduce by gentle pressure with the edge of a pen knife, a portion of lint between the nail and the flesh. By a little manipulation, this may be effected with little if any pain, and the process is to be daily repeated. It will be found that with each repetition of the process, the space between the nail and flesh increases, that a larger portion of lint may be introduced, and that its introduction becomes easier. We have employed this mode of treatment so often, and with such satisfaction, that we confidently urge it on the attention of the profession.

*Case of Impalement.*—Dr. A. C. Garratt, communicated to the Suffolk District Medical Society, the following remarkable case. The subject of it was a sailor, whose magnificent chest attracted the narrator's attention particularly on account of a very large depressed semilunar cicatrix, situated directly over the region of the heart.

"His name was John Taylor. On the 6th of May, 1831, when about twenty years old, he shipped on board the Danish brig Ann, of Scarborough, then lying at the London docks, getting ready for sea; on that very day, while endeavouring to direct and enter what is called the step-bolt, or iron pivot, of the trysail mast into its socket in the rail, the tackling gave way, precipitating him backward upon the deck. The mast, with the iron bar fixed in its lower end, dropped almost perpendicularly upon his chest, driving the rough iron through him into the plank beneath, while the square end of the spar fell upon his thorax, compressing it in a most frightful manner. He remained thus transfixed to the deck, with the mast upon him, until new tackling could be rigged to hoist the spar. He was taken to the London Hospital, apparently in a dying condition, but, rallying under prompt surgical treatment, he gradually recovered. At the end of twelve months, he left the hospital, soon after shipped again as a sailor, and has continued in that employment up to the present time, about twenty-six years. He said that he had not been in London for eighteen years, but that his case must be known to the surgeons there, and that the bar of iron was taken from the mast and placed in the Museum of the Royal College, together with a sketch showing the position, size and shape of his cicatrices.

"So extraordinary a history seemed to warrant investigation, and I prevailed on Mr. Taylor to accompany me to London, where Drs. Ferguson and Partridge recognized him and corroborated his statement. In the Museum I found the sketch and the bolt, and also a record of the case, from which I gained some additional facts. The scalp was extensively laid open; the inferior maxillary bone was fractured, and a portion of it, with several teeth, removed, and there was considerable exfoliation from the different wounds, during his convalescence. At the time of the accident, the anterior extremities of the fifth and sixth ribs of the left side, together with their cartilages, were removed from the wound in front, while portions of the necks of the seventh and ninth ribs of the same side, with a mass of muscle and integument, were removed from near the spine where the bolt made its exit. These are preserved as a wet preparation in the Museum of the London Hospital. The mast weighed 600 pounds, and was thirty-nine feet in length. The bolt was six inches in length. He left the hospital in good condition, and since the accident has had uniform good health, suffering from no general or local weakness, no sensation of stricture about the thorax, no pain, no cough. He lives well, but temperately. On auscultation and percussion, the organs of the chest and abdomen seemed perfectly normal; in short, he presented, in all respects, the appearance of a perfectly healthy and robust man.

"On reviewing this case, we are naturally led to inquire what circumstances could have saved the man from instant death. Was it simply from the fact that the bolt of iron was blunt on its end, and, therefore, after penetrating the anterior parietes of the thorax, it pushed aside, without piercing the heart, blood-vessels, and other important organs, and came out through the back without having caused a necessarily fatal wound? It is instructive, because it is recorded that the man had prompt and thorough surgical treatment, as if he were expected to recover. It also reminds the profession of what the '*vis medicatrix naturæ*' can, and sometimes will do, if aided by skilful hands."—*Boston Med. and Surg. Journ.*, Jan. 14, 1858.

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*Extraction of a Living Child, by Turning, after the Death of the Mother.*—Dr. G. W. Thornton records (*Cincinnati Lancet and Observer*, Feb. 1858), an interesting case of this. The mother died suddenly whilst in labour, from some unascertained cause. Forty minutes elapsed after the last expiration of the mother before Dr. T. arrived, and was able to attend to the undelivered child. He found that the membranes had been ruptured, that the head was in the cavity of the pelvis, the vertex presenting at the inferior strait. Dr. T. raised the fœtal head, passed a hand into the flaccid womb, turned the child and extracted it as far as the head without delay; at this point it momentarily hung until assisted by the fingers in its mouth. Thus, forty-five minutes elapsed from the last expiration of the mother to the complete extraction of the child.

The child did not breathe, and was of a bluish colour; but a slight ticking sensation could be heard on the ear being placed over the heart. The fauces were cleared, Marshall Hall's ready method then diligently practised for half an hour, when a convulsive inspiration took place. This method was persevered in, assisted by aspersions and frictions, and at length respiration was established. The child, a boy of the average size, sucked vigorously at the bottle, and lived for three weeks and two days; its death, probably, resulting from want of sufficient care.

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*Absence of Urea and Uric Acid in Urinary Secretions in Yellow Fever.*—Dr. F. Peyre Porcher states (*Charleston Medical Journal and Review*, Jan. 1858), that after careful microscopic and other examinations of the secretions from the kidneys, during the whole course of an epidemic of yellow fever, occurring in Charleston, in 1856, he has been able to trace the constant absence of uric acid and urea. This failure of the urinary organs to eliminate this substance Dr. P. regards as of great importance, and he attributes to it some of the most dangerous symptoms in the progress of the disease, as the coma and other indications of torpor of the brain in the latter stages.

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*Creasote in Dysentery.*—Dr. G. E. Elmer states (*New Orleans Med. News and Hospital Gaz.*, Jan. 1858), that in an epidemic dysentery of a very malignant and fatal type, which prevailed twelve years since in a malarious section of the Parish Avoyalles, and which resisted ordinary treatment, creasote in doses of two drops in gum Arabic mucilage, given every two hours, arrested the disease.

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*Euphrasia Officinalis as a Cure for Epilepsy.*—Dr. J. G. Kyle recommends (*Western Lancet*, Dec. 1857) the *Euphrasia Officinalis* as a remedy for epilepsy. His attention was directed to it, from its being used as a domestic remedy for the cure of the disease, and he has employed it himself with success. He gave four ounces of the infusion every morning fasting.

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*Treatment of Prolapse of the Funis.*—Dr. T. Gaillard Thomas, in a paper recently read before the New York Academy of Medicine (*New York Journ. Med.*, March, 1858), recommends that in cases of prolapsus of the funis, the woman should be placed on her knees, with her face and chest resting upon the bed. His rules for the treatment of prolapsus are:—

1st. If the cord is detected before the waters have broken, let no manual assistance be offered, but place the woman at once in position, and trust to this for its return to the uterus.

2d. Should the waters have flowed away, and left the cord below the head, place the woman in position, and push it up with the hand if practicable, or with a porte cordon, consisting of a gum elastic catheter, with a tape passed through it, if not so—

3d. Let no manipulations be commenced until the woman be placed in position.

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*Inoculation with Gonorrhœal Matter for the Cure of Granular Lids and Corneitis.*—A case is recorded in a recent No. of the *Cincinnati Lancet and Observer* (Jan. 1858), of granulations of the lids with corneitis, treated by the application of gonorrhœal matter to the conjunctiva. We regret to find that such a practice has been introduced in this country, for though sanctioned by Piringer and Jaeger, we believe that it is wholly unnecessary, exceedingly unsafe, and, in fact, calculated rather to aggravate the mischief than afford relief. We had hoped that such eccentricities and extravagancies in ophthalmic practice would find no imitators among ophthalmic surgeons in this country.

# INDEX.

A.

Achillea millefolium, emmenagogue action of, 503
Acute rheumatism cured by large doses of iodide of potassium, 519
Addison, disease of supra-renal capsules, 509
Adhesive plaster as a counter-extending means in fractures of thigh, 105
Air, chemical changes in, during respiration, 500
Albumen, physiological relations of, 497
Alkalies, influence of, on belladonna, hyosciamus, and stramonium, 501, 502
American insane hospital reports, notices of, 213, 449
Amputation at knee-joint, 272
Anæsthesia in phthisical vomiting, 266
André, tracheotomy in croup, 272
Aneurism, popliteal, cured by compression, 535
Ankle-joint, Perogoff's operation at, 536
Anthelmintic, kameela as an, 522
Antidote to poison of rattlesnake, 94, 375
Apoplexy, embolic, 267
Appendix vermiformis, fatal disease of, 383
Aran, perchloride of iron in erysipelas, 520
Arterio-venous aneurism, 268
Ashton on Diseases, &c., of the Rectum, notice of, 487
Asphyxia of submersion, 262
——— from imperfect combustion of gas in a gas stove, 567
Asthma, effect of local influences on, 517
Atcherley, anæsthesia in phthisical vomiting, 266
Atlee, peracephalus, 370
——— rupture of trachea, 120

B.

Barclay, Manual of Diagnosis, notice of, 485
Barker, intra-uterine fractures, 552
Beale's Archives of Medicine, notice of, 483
Becquerel, method of determining sugar in diabetic urine, 243
Belladonna and mercurial ointment in croup, 340
——— in incontinence of urine, 267
——— influence of alkalies on therapeutic properties of, 501, 502
Bennett, injections of bronchi in pulmonary diseases, 265
Bernard, elimination of sulphuretted hydrogen by the lungs, 245
Bernard, variation in colour of venous blood, 494
Bibron's antidote to poison of rattlesnake, 94, 375
Biological Society of Paris, notice of Memoirs, &c., of, 482
Bird on erysipelas, 264
Bladder, and uterus, reciprocal sympathies of, 544
——— foreign bodies introduced in, 277
——— gun-shot wound of, recovery, 295
Blood, uses and properties of dark and red 496
Bloomingdale Asylum report, notice of, 455
Boisliniere, thrombus of vagina, 566
Bran loaf for diabetic patients, mode of preparing, 254
Briquet on hysteria, 261
Broadbent, after-treatment of surgical operations, 525
Brodhurst, on club-foot, &c., notice of, 233
Bronchi, injections of, in pulmonary diseases, 265
Bronzed skin and disease of supra-renal capsules, 509
Brown, singular result of injury in last stage of pregnancy, 555
Brown-Séquard, Journal of Physiology, notice of, 479
——— uses and properties of red and dark blood, 496
Budd, treatment of diabetes with sugar, 506
Burns, collodion and castor oil in, 532

C.

California, notice of Transactions of Medical Society of, 210
Campbell, large doses of iodide of potassium in acute rheumatism, 519
——— Secretory and Excito-Secretory System of Nerves, notice of, 470
——— treatment of inverted toe-nail, 568
Camplin, mode of preparing bran loaf for diabetic patients, 254
Cancer, epithelial, 276
——— escharotic treatment of, 274
——— present state of surgical science in reference to, 273
Cancerous lymphatic glands, 530
Carnochan, excision of entire radius, 363
——— exsection of trunk of second branch of fifth pair of nerves for neuralgia, 134
Carotid artery, ligature of, 226

Casselberry, use of iron, 327
Catalepsy cured by nitrate of silver, 143
Cataract, spasms of the eye after extraction of, 279
——— Fenner on, 565
Caustic glycerine in lupus, 253
Cazeaux's Midwifery, notice of, 484
Cervix femoris, intra-capsular fractures of, 227
Chereau, suicide and intoxication by chloroform, 286
Chest diseases, cod-liver oil in, 264
Chisholm, bandage for fracture of clavicle, 564
Chlorate of potash in stomatitis materna, 296
Chloride of potash, therapeutic action of, and new mode of administering, 523
Chloroform, death from, 288
——— in intermittent fever, 266
——— suicide and intoxication by, 286
Cholera, Asiatic, 263
Chorea, tartarized antimony in, 522
Choroid plexuses of the human brain, 491
Chronic rheumatism, principles of treatment in, 519
Clarke on perforation of membrana tympani, 13
Clavicle and humerus of same side, fracture of, 352
——— bandage for fracture of, 564
Clinique of the Midi Hospital, review of, 427
Coagula in veins during puerperal state, 548
Cocoa-nut oil ointments, 506
Cod-liver oil, administration in capsules, 504
——— gelatinization of, 253
——— in chest diseases, 264
——— with Iceland moss, 253
Colchicine, experiments on, 502
Colchicum, comparative action of dry bulbs and the seeds of, 502
College of Physicians of Philadelphia, Transactions of, 377
Collodion and castor oil in burns, 532
——— in orchitis, 532
Confection of cinchona as an antiperiodic, 293
Congelations, 530
Consumption, specific treatment of, by phosphorus, 516
Coolidge, vital statistics of war, 86
Cooper, removal of foreign body from beneath the heart, 229
——— spasms of the eye after extraction of cataract, 279
——— dislocation of crystalline lens, 543
Coote, process of repair in division of tendo-achillis, 527
Corfe, treatment of diabetes with sugar, 508
Cotton, specific treatment of consumption by phosphorus, 516
Cow's milk, mode of improving, 254
Creasote in dysentery, 570
Croft, experience as to Perogoff's operation at ankle-joint, 536
Cross-presentations, 553
Croup, belladonna and mercurial ointment in, 340
——— glycerine in, 338
——— tracheotomy in, 272
Cutter, dislocation of first phalanx of thumb, 561

D.

Delioux, chloroform in intermittent fever, 266
Denucé, foreign bodies introduced into bladder, 277
Derrubaix, prevention of ill consequences of operation, 271
Deschamps, formula for liquor cinchona, 253
Dethan, therapeutic action of chloride of potash, and new mode of administering it, 523
De Vesey, Bibron's antidote to the poison of rattlesnake, 375
Diabetes, different nature of certain forms of, 243
——— treatment of, with sugar, 506
Diabetic urine, method of determining sugar in, 242, 243
Diagnosis, notice of Barclay's Manual of, 485
Diamantapuplos, extra-uterine gestation, 551
Diarrhœa, guarana in, 521
Diphtheritic ophthalmia, 280
Dislocation of crystalline lens, 543
——— of humerus reduced by manipulation, 344
——— of os coccygis, 270
——— revision of doctrine of, 268
Dugas on Fractures of Scapula, notice of, 222
Dunglison's Medical Lexicon, notice of, 232
Dysentery, creasote in, 570
Dysuria, large doses of quinine in, 532

E.

Elimination, doctrine of, 524
Ellis, defects of escharotics, and suggestions for their improvement, 503
Elmer, creasote in dysentery, 570
Encephaloid tumours weighing ten pounds, 291
Epilepsy, lactate of zinc in, 522
Epistaxis arrested by administration of common salt, 390
Epithelioma of lip cured by sulphate of zinc, 346
Erysipelas, nature, treatment, &c., 264
——— perchloride of iron in, 520
Escharotics, defects of, and suggestions for their improvement, 503
Esmarch, embolic apoplexy, 267
Euphrasia officinalis in epilepsy, 570
Eve's Remarkable Cases in Surgery, notice of, 230
Excision of enlarged tonsils, 535
Excrement, human, immediate principles of, 248
Extra-uterine gestation, 551
Eye, injurious effects on, of the light from the fish-tail burner, 377
—— spontaneous rupture of, 373

F.

Fallopian pregnancy, 123
Faulkner, chlorate of potash in stomatitis materna, 296

Femur, fracture of neck of, bony union, 294
——— resection of, 354
Fenner on cataract, 565
Fleming, spontaneous rupture of eye, 373
Flint, on pulmonary tuberculosis, 52
Formula for caustic glycerine, 253
——— for confectio cinchonæ, 294
——— for gelatinization of cod-liver oil, 253
——— for liquor cinchonæ, 253
——— for valerianate of ammonia, 253
Fournier, Clinic of the Midi Hospital, review of, 427
Fracture of clavicle and humerus, same side, 352
Fractures, intra-uterine, 552
France on supposed influence of alkalies on belladonna, stramonium, &c., 502
French, quadruple births, 282
Friends' Asylum, notice of report of, 213
Functional paralysis, 524
Funis, treatment of prolapse of, 570

G.

Gallaher, poisoning by laudanum, 559
Garratt, impalement, 568
Garrod, influence of alkalies on therapeutic properties of hyoscyamus, belladonna, and stramonium, 501
——— method of determining sugar in diabetic urine, 243
Gay, fracture of neck of femur, bony union, 294
—— ovariotomy, 296
—— Surgical Cases, notice of, 228
Gibb, poisoning by laudanum, 288
Gilbert, adhesive plaster as a counter-extending means in fractures of thigh, 105
Girwood, permanganate of potash as a caustic, deodorant, &c., 249
Glaucoma, pathology of, 539
Gloninger, confection of cinchona as an anti-periodic, 293
Glyceramyl, a proposed substitute for fats in ointments, 506
Glycerine in pseudo-membranous croup, 338
Glysamyl, a proposed substitute for fats in ointments, 506
Gobley, preparation of iodide of calomel, 505
Grinstead, gun-shot wound of bladder, recovery, 295
Griscom, melanotic tumours of thoracic and abdominal viscera, 392
Gross's Pathological Anatomy, review of, 145
Guarana in chronic diarrhœa, 521
Gumprecht, mode of improving cow's milk, 254

H.

Habershon, treatment of pleuro-pneumonia, 514
Hæmophilia, 259
Halsey, resection of lower-jaw for necrosis, 356
Hammond, alterations induced by intermittent fever in the urine, and on action of disulphate of quinine, 322
Hammond, Bibron's antidote to poison of rattlesnake, 94
Harley, chemical changes in air during respiration, 500
——— histology of supra-renal capsules, 492
——— function of supra-renal capsules, 493
Harris, Fallopian pregnancy, 123
Hartford Retreat for Insane, notice of report of, 456
Hartshorne, fatal enlargement of the thymus with subjacent tumour, 378
Haughton, the oriental bath, 249
Hayden, physiological relations of albumen, 497
Hays, foreign body retained in nasal fossæ twenty years, 390
Heath, death from chloroform, 288
Hebra, caustic glycerine in lupus, 253
Hemorrhoids, treatment of, 273
Hernia, case of, 560
Hernia of ovaries, 284
Herpin, lactate of zinc in epilepsy, 522
Hervé, guarana in chronic diarrhœa, 521
Hewitt, coagula in veins during puerperal state, 548
Hip-joint, osteoid tumour connected with capsular ligament of, 109
Hird, present state of surgical science in reference to cancer, 273
Hodgson, Prostate Gland, notice of, 478
Hulke, pathology of glaucoma, 539
——— nævi of eyelids, 543
Humerus, luxation of, reduced by manipulation, 344
Hunter, monstrosity, 294
Huss, case of hæmophilia, 259
Hutchinson, disease of supra-renal capsules, 509
Hydrocele cured by excision of tunica vaginalis testis, 345, 346
———— diagnosis of, 538
Hydropneumothorax treated by paracentesis thoracis and injections of iodine, 515
Hyoscyamus, supposed influence of alkalies on therapeutic properties of, 501, 502
Hysteria, Briquet on, 261

I.

Impalement, 568
Incontinence of urine, belladonna in, 267
Indiana, notice of Transactions of Medical Society of, 199
Inman, doctrine of elimination, 524
——— principles of treatment in chronic rheumatism, 519
Inoculation with gonorrhœal matter for cure of granulur lids, 570
Insane hospital reports, notices of, 213, 449
Intermittent fever, chloroform in, 266
Intestinal walls, nerves of, 240
Inverted toe-nail, treatment of, 568
Iodide of calomel, preparation of, 505
Iron, use of, 327
Isaacs, disarticulation and removal of nearly half of lower jaw, 295
——— anomalous situation of left kidney, 295

J.

Jacubowitsch, histology of nervous system, 237
Jewell, annual report on meteorology and epidemics, 395
Johnson on Intra-Capsular Fractures of Cervix Femoris, notice of, 227
Jones, functional paralysis, 524

K.

Kameela as an anthelmintic, 522
Kelly, ruptured uterus, 552
Kidney, anomalous situation of left, 295
King, catalepsy cured by nitrate of silver, 143
Kirster, presence of sugar in urine of pregnant, parturient, and puerperal women, 244
Kyle, euphrasia officinalis in epilepsy, 570

L.

Lactate of zinc in epilepsy, 522
Lane, amputation at knee-joint, 272
——, case of hernia, 560
Laudanum, poisoning by twelve drachms of, 288
————, poisoning by, 559
Leared, kameela as an anthelmintic, 522
Lee, membrana decidua in tubal pregnancy, 549
—— Pathological and Surgical Observations, notice of, 234
Lenhossek, structure of nervous centres, 239
Leucorrhœa, iodide of potassium in, 296
Levick, melanotic tumours, 393
Liquor cinchonæ, formula for, 253
Liver, congenital malformation of, 380
Lotion for strumous glands, 505
Lower jaw, removal of half of, 295
———— resection of, for necrosis, 356
Lungs, elimination of sulphuretted hydrogen by, 245
——— foreign body retained four years in, 380
Lupus, caustic glycerine in, 253
Luschka, choroid plexuses of the human brain, 491

M.

Marcet, immediate principles of human excrement, 248
Marcotti, tartarized antimony in chorea, 522
Marshall Hall, case of, 255
520
Martyn, function of thyroid body, 241
Massachusetts State Hospital, notice of report of, 460
Mathey, perchloride of iron in erysipelas,
Mayer, glycerine in pseudo-membranous croup, 338
McCormac on cholera, 263
M'Clintock, new symptom of rupture of uterus, 283
M'Rae, compound fracture of skull, and loss of portion of brain, 293
Meigs, Diseases of Children, notice of, 479
Meissner, nerves of intestinal walls, 240
Melanotic tumours of the viscera, without external symptoms, 392
Membrana decidua in tubal pregnancy, 549
———— tympani, perforation of, 13
Meteorology and epidemics, report on, 395
Miller's Obstetrics, review of, 180
——— Practice of Surgery, notice of, 236
Monster of the genus peracephalus, 370
Monstrosity, 294
Montgomery, reciprocal sympathies of uterus and bladder, 544
Moore, arterio-venous aneurism, 268
Morris, congenital malformation of liver, 380
——— epistaxis arrested by administration of common salt, 390
Movable kidneys, 523

N.

Nævi of eyelids, 543
Nasal fossæ, foreign body retained in twenty years, 390
National hotel epidemic, 97
Necrosis from fumes of phosphorus, 356
Nelaton, diagnosis of hydrocele, 538
Nerves of intestinal walls, 240
Nervous centres, structure of, 239
——— system, histology of, 237
Neuralgia, exsection of nerve for, 134
New Hampshire, notice of Transactions of Medical Society of, 202
———————— State Asylum Report, notice of, 461
New York City Lunatic Asylum Report, notice of, 453
———— State Lunatic Asylum, notice of report, 458
Nitrate of silver in catalepsy, 143
Nitsche, acute poisoning by phosphorus, 288

O.

Œdema glottidis, 518
Ohio Central State Asylum, notice of report of, 213, 450
—— Northern State Asylum, notice of report of, 218
—— Southern State Asylum, notice of report of, 219, 451
Oldham, hernia of both ovaries, 284
Operations, prevention of ill consequences of, 271
Oppolzer, movable kidneys, 523
Orchitis, collodion in, 532
Oriental bath, 249
Os coccygis, dislocation of, 270
Osteoid growth connected with capsular ligament of hip-joint, 109
Ovaries, hernia of, 284
Ovariotomy, 296

P.

Paget, cancerous lymphatic glands, 530
——— enlarged tonsils, 535
——— strumous inguinal glands, 529
——— suppuration of strumous glands, 528
Paralysis, functional, 524
Pavy, starch from the animal kingdom, 246
Payne, iodide of potassium in leucorrhœa, 296
Peaslee's Human Histology, review of, 173
Perchloride of iron in erysipelas, 520
Permanganate of potash as a caustic deodorant, &c., 249
Phosphorus, poisoning by, 288
——— specific treatment of consumption by, 516
Physiology, notice of Brown-Séquard's Journal of, 479
Pitha, œdema glottidis, 518
Placenta, influence of upon the development of the uterus during pregnancy, 309
——— prævia, 391
Plasma, a substitute for fats in ointments, 506
Pleuro-pneumonia, treatment of, 514
Pneumonia after laryngotomy, causes of, 525
Poisoning by laudanum, 288
——— phosphorus, 288
Popliteal aneurism cured by compression, 535
Porcher, absence of urea and uric acid in urine in yellow fever, 570
Porter, notes of campaigns in the war with Mexico, 347
Potato, chemical properties of, 255
Prostate, enlarged, 473
Pseudo-membranous croup, glycerine in, 338
Pulmonary tuberculosis, report on, 52

Q.

Quadruple births, 282
Quinine, large doses of in dysuria and retention, 532

R.

Radius, excision of, 363
Rand, injurious effects on the eye of the light from a fish-tail burner, 377
Rattlesnake, Bibron's antidote to poison of, 94, 375
Read, influence of placenta on development of uterus during pregnancy, 309
Rectum, notice of Ashton on Diseases, &c. of, 487
Red blood and dark blood, properties and uses of, 496
Report of Friends' Asylum, Philadelphia, notice of, 213
——— U. S. Government Hospital, notice of, 216
——— Ohio Central State Asylum, notice of, 217, 450
——— Ohio Northern State Asylum, notice of, 218
——— Ohio Southern State Asylum, notice of, 219, 451
Report New City Lunatic Asylum, 453
——— Bloomingdale Asylum, 455
——— Vermont State Asylum, 455
——— Western Lunatic Asylum of Virginia, 456
——— Retreat at Hartford, 456
——— New State Lunatic Asylum, 458
——— Massachusetts State Lunatic Asylum, 460
——— New Hampshire State Asylum, 461
Respiratory organs, treatment of inflammatory diseases of, 513
Retention of urine, large doses of disulphate of quinine in, 532
Rheumatism, acute, treatment of, 519
——— chronic, treatment of, 519
Rhoads, placenta prævia, 391
Ricord's Lectures on Chancre, review of, 427
Roeser, revision of doctrine of dislocation, 269
Rogers, chemical properties of potato, 255
Ronzier-Joly, emmenagogue action of achillea millefolium, 503
Rottlera tinctoria as an anthelmintic, 522
Ruptured uterus, 552
Rupture of uterus, new symptom of, 283

S.

Salter, effect of local influences on spasmodic asthma, 517
Sawyer, osteoid growth connected with capsular ligament of hip-joint, 109
Scalds, collodion and castor oil in, 532
Scapula, fractures of, 222
Schacht, proposed substitute for fats in ointments, 506
Schneck, fracture of clavicle and humerus of same side, 352
Schroff, experiments on colchicine, and on the dry bulbs and seeds of colchicum, 502
Schub, causes of pneumonia supervening after laryngotomy, 525
Semple, treatment of inflammatory diseases of respiratory organs, 513
Serres, large doses of disulphate of quinine in dysuria and retention, 532
Shelton, belladonna and mercurial ointment in croup, 340
Shepherd, encephaloid tumours involving kidney, 291
Shoulder-joints, simultaneous dislocation of both, 295
Sims, new uterine elevator, 132
Skull, compound fracture of with loss of portion of brain, 293
Smith, cod-liver oil in chest diseases, 264
——— Strictures of the Urethra, review of, 433
——— treatment of obstinate stricture of urethra, 537
Somnambulism, 361
Sore nipples, application to, 296
South Carolina, notice of Transactions of Medical Association of, 209
Spaeth, on cross presentations, 553
Spasmodic asthma, effect of local influences on, 517
Starch from the animal kingdom, 246

Statistical table of mean height of recruits, 296
Stomatitis materna, chlorate of potash in, 296
Storer, cupping interior of uterus, 117
Strabismus, with imperfect vision, 281
Stramonium, influence of alkalies on therapeutic properties of, 501, 502
Stribling, somnambulism, 361
Stricture of urethra, 537
Strictures of urethra, review of Smith on, 433
Strumous glands, lotion for, 505
——— suppuration of, 528
——— inguinal glands, 529
Sugar in diabetic urine, method of determining, 242, 243
—— presence of in urine of pregnant, parturient and puerperal women, 244
—— treatment of diabetes with, 506
Suicide by chloroform, 286
Sulphate of zinc as a caustic, 504
Sulphuretted hydrogen, elimination of by the lungs, 245
Sulphuric acid as a caustic, 504
Supra-renal capsules, histology of, 492
——— function of, 493
——— disease of, 509
Suppuration of strumous glands, 528
Surgical operations, after-treatment of, 525
Syme, escharotic treatment of cancer, 274

T.

Tartarized antimony in chorea, 522
Taylor, tumour occurring after delivery, 558
Tendo-Achillis, process of repair after division of, 527
Thighs, dislocation of both, 563
Thomas, treatment of prolapse of funis, 570
Thompson, epithelial cancer, 276
——— Enlarged Prostate, notice of, 473
——— sulphuric acid and sulphate of zinc as a caustic agent, 504
Thoracic aneurism successfully treated, 532
Thornton, extraction of a living child from a dead mother, 569
Thrombus of vagina, 566
Thumb, dislocation of, 561
Thymus gland enlarged with subjacent tumours causing death, 378
Thyroid body, function of, 241
Tonsils, excision of enlarged, 535
Trachea, rupture of, 120
Tracheotomy in croup, 272
Transactions of Indiana State Medical Society, notice of, 199
——— of New Hampshire Medical Society, notice of, 202
——— of South Carolina Medical Association, notice of, 209
——— of Medical Society of California, notice of, 210
Trousseau, hydropneumothorax, 515
Tufnell, thoracic aneurism successfully treated, 532
Tumour occurring after delivery, 558

U.

Urethra, Strictures of, review of, 433
Urinary organs, chronic disease of with anomalous symptoms, 382
Urine, belladonna in incontinence of, 267
——— new symptom of rupture of, 283
——— alterations produced in by intermittent fever, and by disulphate of quinine, 322
U. S. Government Hospital, notice of report of, 216
Uterine elevator, 132
Uterus, cupping interior of, 117
——— and bladder, reciprocal sympathies of, 544

V.

Valerianate of ammonia, preparation of, 252
Valette, congelations, 530
Van Beuren, simultaneous dislocation of both shoulder-joints, 295
Vagina, thrombus of, 566
Van Halsbeck, treatment of hemorrhoids, 273
Vanzinetti, popliteal aneurism cured by compression, 535
Venous blood, variation in colour of, 494
Vermont State Asylum Report, notice of, 455
Virginia, report of Western Lunatic Asylum of, notice of, 456
Vital statistics of war, 86
Vomiting, phthisical, anæsthesia in, 266

W.

Walter, resection of femur, 354
Walton, vascular tumour of orbit, 542
Waring, national hotel epidemic, 97
War, vital statistics of, 86
Warren, dislocation of both thighs, 563
Waters, asphyxia of submersion, 262
Wells, administration of cod-liver oil in capsules, 504
Williams, treatment of diabetes with sugar, 507
Wilson on diseases of the skin, notice of plates illustrative of, 490
Wister, chronic disease of urinary organs with anomalous symptoms, 382
——— fatal disease of appendix vermiformis, 383
Wood, foreign body retained two years in lungs, 380
——— on ligature of primitive carotid, notice of, 226
Woodward, dislocation of humerus reduced by manipulation, 344
——— hydrocele cured by excision of tunica vaginalis testis, 345, 346
——— epithelioma of lip cured by sulphate of zinc, 346

Y.

Yellow fever, absence of urea and uric acid in urine in, 570

## GRADUATES OF JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA,

### March, 1858.

At a Public Commencement, held on the 9th of March, 1858, the degree of Doctor of Medicine was conferred on the following gentlemen by the Hon. Edward King, LL. D., President of the Institution; after which a Charge to the Graduates was delivered by Professor Charles D. Meigs.

| NAME. | STATE OR COUNTRY. | SUBJECT OF THESIS. |
|---|---|---|
| Ackley, Henry | New Jersey. | Chlorosis. |
| Alexander, W. C. S. | Virginia. | Puerperal Peritonitis. |
| Allison, James | Kentucky. | Typhoid Fever. |
| Allison, J. A. | North Carolina. | Typhoid Fever. |
| Applewhite, Louis J. | Georgia. | Medical Science. |
| Bacon, S. L. | New Jersey. | Epidemic Rubeola. |
| Barksdale, William Leigh | Virginia. | Dysentery. |
| Barrett, E. Calhoun | Virginia. | Entero-mesenteric Fever. |
| Bass, John N. | Kentucky. | Signs of Pregnancy. |
| Bear, Benjamin, Jr. | Pennsylvania. | Strangulated Femoral Hernia. |
| Bell, George W. | Pennsylvania. | Treatment of Typhoid Fever. |
| Bell, James Eugene | Georgia. | Puerperal Fever. |
| Bell, J. H. | South Carolina. | The Practice of Medicine. |
| Bell, William | Virginia. | Opium and its Preparations. |
| Berry, A. J. | South Carolina. | Intermittent Fever. |
| Bertolette, J. C. | Pennsylvania. | The Vegetable World. |
| Bibb, Henry C. | Alabama. | Inflammation. |
| Bill, J. H., Jr. | Pennsylvania. | Specific Solvent Power of Simple Syrup. |
| Black, John | North Carolina. | Congestive Fever. |
| Blount, T. M., Jr. | Dis. of Columbia. | A Case of Necrosis. |
| Bogle, R. L. | Georgia. | Southern Typhoid Fever. |
| Bond, Francis E. | Montevideo. | Epidemic Yellow Fever. |
| Bowyer, Edmund F. | Virginia. | Typhoid Fever. |
| Bradford, F. Standish | Rhode Island. | Pathology of Diabetes Mellitus. |
| Branch, John H. | North Carolina. | Æsthetics of Medicine. |
| Branham, P. A. | Georgia. | Erysipelas. |
| Branin, Henry E. | New Jersey. | Congestive Fever. |
| Bright, George H. | South Carolina. | Bright's Disease. |
| Briscoe, Thomas W. | Virginia. | Rubeola. |
| Brooke, John B. | Pennsylvania. | Tartarized Antimony as a Remedial Agent in Cardiac Dropsy. |
| Brown, N. M. | Ohio. | Cholera Infantum. |
| Brunson, Randolph | Tennessee. | Carcinoma. |
| Bryant, William M. | Alabama. | Post-mortem Examinations. |
| Buehler, H. B. | Pennsylvania. | Valerianate of Ammonia. |
| Burks, Charles R. P. | Virginia. | Cholera Infantum. |
| Butcher, George E. | New Jersey. | Dysentery. |
| Cade, E. W. | Texas. | The Tongue as an Index of Disease. |
| Caldwell, Samuel H. | Tennessee. | Variola. |
| Campbell, J. M. | North Carolina. | Oleum Terebinthinæ. |
| Capers, Le Grand G., Jr. | Texas. | Physiology of Digestion. |
| Carson, Samuel M. (M. D.) | Tennessee. | Ice. |
| Cessna, B. F. (M. D.) | Ohio. | Nature and Treatment of Phthisis. |
| Christie, James (M. D.) | New Brunswick. | Ferrum. |
| Clark, Isaac J. | New Jersey. | Cynanche Tonsillaris. |
| Clinkscales, F. | South Carolina. | Enteric or Typhoid Fever. |
| Combe, C. B. | Kentucky. | Etiology, Pathology, &c., of Yellow Fever. |
| Cook, Joseph L. | Pennsylvania. | Typhoid Fever. |
| Coudrick, Charles R. | New Jersey. | Arsenious Acid as a Poison and a Therapeutic Agent. |
| Crawford, John C. | South Carolina. | Inguinal Hernia. |

| NAME. | STATE OR COUNTRY. | SUBJECT OF THESIS. |
|---|---|---|
| Crawford, William | Ohio. | Variola. |
| Crockett, R. A. (M. D.) | Tennessee. | Nature of Tuberculosis. |
| Crump, Lawrence S. | Virginia. | Delirium Tremens. |
| Culler, J. P. H. | Georgia. | Heterologous Formations. |
| Cummins, J. M. | Pennsylvania. | Cold as a Therapeutic Agent. |
| Cummins, Lewis C. | Pennsylvania. | Menstruation. |
| Daniels, Henry A. | England. | Functions of the Great Sympathetic Nerve. |
| Davis, Jesse Hudson | Pennsylvania. | Typhoid Fever. |
| De Yampert, T. J. L. | Alabama. | Chorea. |
| Draper, Joseph | Massachusetts. | Bony Union. |
| Drewry, Henry Martyn | Virginia. | Narcotics. |
| Du Pont, Charles E. | South Carolina. | Menstruation. |
| Eades, Upson R. | Georgia. | Acute Dysentery. |
| Epes, Algernon S. | Virginia. | Opium, its Preparations and Effects. |
| Epes, J. W. | Alabama. | Entero-mesenteric Fever. |
| Evans, Edwin C. (M. D.) | Missouri. | Occlusion of the Bowels. |
| Ewing, George C. | Pennsylvania. | Tabacum. |
| Figgat, William F. | Virginia. | Puerperal Convulsions. |
| Franklin, J. W. | Virginia. | Femoral Hernia. |
| Freyman, A. A. | Pennsylvania. | Acute Dysentery. |
| Galt, William J. | Pennsylvania. | Menstruation. |
| Gartrell, Homer L. | Georgia. | Variola. |
| Gilkeson, James B. (M. D.) | Virginia. | Cinchona. |
| Gilliam, James S. (M. D.) | Virginia. | Pneumonia. |
| Gilmore, J. T. | Mississippi. | Stricture of the Urethra. |
| Good, D. R. | Pennsylvania. | Health. |
| Goodgion, W. H. | South Carolina. | Remittent Fever. |
| Gootee, Benjamin S. | Maryland. | Erysipelas. |
| Graham, John A. | Virginia. | Inguinal Hernia. |
| Green, William | Virginia. | Entero-mesenteric Fever. |
| Guerrant, T. D. F. | Virginia. | Indigestion as a Cause of Disease. |
| Hale, Peter J. | Virginia. | Dysentery. |
| Haley, Argyle | Virginia. | The Human Hand. |
| Harrell, Richard A. | Virginia. | Intermittent Fever. |
| Harris, William H. | Georgia. | Water, its Physiological and Therapeutical Uses. |
| Harvey, Granville | Missouri. | Typhoid Fever. |
| Hauser, R. A. | North Carolina. | Dysentery. |
| Hayslett, A. J. | Virginia. | Scarlatina. |
| Heath, William H. | South Carolina. | Gonorrhœa. |
| Henderson, F. B. | Alabama. | Pneumonia. |
| Herndon, Charles L. C. | Kentucky. | Acne. |
| Hoffman, J. M. | Pennsylvania. | Ovariotomy. |
| Hoffman, J. R. | Tennessee. | Thesis Writing. |
| Holman, John N. | Mississippi. | Entero-mesenteric Fever. |
| Hoover, George W. | Pennsylvania. | Eclampsia Gravidarum et Parturientium. |
| Hopkins, James Alfred | Delaware. | Intermittent Fever. |
| Hornor, S. H. | New Jersey. | Treatment of Diabetes. |
| Ingersoll, Charles J., Jr. | Mississippi. | Heterologous Formations. |
| Jackson, La F. | Virginia. | Apoplexy. |
| Kent, Joseph W. | Virginia. | Inflammation. |
| Kerr, William | Alabama. | Acute Gastritis. |
| Kimbrough, Andrew H. | Illinois. | Inflammation. |
| Kindleberger, David | Ohio. | Sleep. |
| King, A. M. | Mississippi. | Typhoid Fever. |
| King, E. C. | Texas. | Malaria. |

| NAME. | STATE OR COUNTRY. | SUBJECT OF THESIS. |
|---|---|---|
| King, James T. | North Carolina. | Opium and its Effects. |
| King, T. Starke | Mississippi. | Typhoid or Entero-mesenteric Fever. |
| King, W. Norvell | Ohio. | Apoplexy. |
| King, William M. | Pennsylvania. | Surgical Affections of the Joints. |
| Kirksey, E. Jehu | Alabama. | Prolapsus Uteri. |
| Lee, Paul C. | Alabama. | Epilepsy. |
| Legge, Josiah H. | Maryland. | Entero-mesenteric Fever. |
| Lewis, Charles I. | Virginia. | Peritonitis. |
| Lewis, Isaiah M. | Pennsylvania. | Traumatic Hemorrhage. |
| Leyburn, John | Virginia. | The Obstetrician's Life. |
| Lockwood, N. S. | New York. | Sulphate of Morphia. |
| Madison, Charles P. | Illinois. | Entero-mesenteric Fever. |
| Marbourg, H. W. | Pennsylvania. | Chorea. |
| Marshall, N. S. | Pennsylvania. | Diagnosis. |
| McCann, Robert C. | Mississippi. | Rubeola. |
| McCants, W. J. | South Carolina. | Tubercular Phthisis. |
| McCluney, J. F. | South Carolina. | Functions and Phenomena of the Uterine System. |
| McConaughy, D. W. | Pennsylvania. | Acute Meningitis. |
| McCormick, Charles (M. D.) | Virginia. | Chloroform. |
| McFarland, R. W. | Kentucky. | Typhoid Fever. |
| McNemar, M. R. | Virginia. | Puerperal Convulsions. |
| McQueen, S. F. | Alabama. | Pneumonia. |
| Meredith, Joseph S. | Virginia. | Acute Laryngitis. |
| Merriman, W. H. | New York. | Vaccination. |
| Miller, John F. | North Carolina. | Dysentery. |
| Mitchell, John F. | Virginia. | Relapsing Fever. |
| Mitchell, R. V. | Alabama. | Duties of a Young Physician. |
| Montgomery, John | Pennsylvania. | Functions of the Liver. |
| Moody, J. Monroe | Tennessee. | Cholera Epidemica. |
| Moomau, James P. | Virginia. | Acute Dysentery. |
| Moore, E. D. | Mississippi. | Pelvic Presentation. |
| Moore, J. A. | Alabama. | Pneumonia. |
| Morrison, A. J. | Kentucky. | Erysipelas. |
| Nelson, John A. | Virginia. | Dysentery. |
| Nordmann, L. E. | Pennsylvania. | Pernio. |
| Oliver, James W. | Virginia. | The Cerebrum in health and disease. |
| Paine, A. B. | North Carolina. | Dysentery. |
| Palmer, Valentine Jackson | North Carolina. | Typhoid Fever. |
| Parberry, William | Missouri. | Malaria and its Modus Operandi in the Production of Intermittent Fever. |
| Paslay, E. C. | South Carolina. | Florida. |
| Patton, George E. | Tennessee. | Symptoms and Diagnosis of Dysentery. |
| Payne, Philander W. | Indiana. | The Conservative Element in the Animal Economy. |
| Pelot, J. Crews | Florida. | Malaria. |
| Peyton, Lawrence R. | Kentucky. | Causes of Erysipelas. |
| Phillips, P. Sandford | Alabama. | Typhoid Pneumonia. |
| Pomerene, Joel | Ohio. | Typhoid Fever contagious. |
| Pope, Sampson | South Carolina. | Entero-mesenteric Fever. |
| Randall, William | Indiana. | Pathology of Congestion. |
| Rankin, A. H. | Pennsylvania. | Variola. |
| Reiber, William F. | Pennsylvania. | Scarlatina. |
| Reeve, Stephen S. | Georgia. | Dyspepsia. |
| Rice, Thomas C. | Virginia. | Syphilis. |
| Ricks, Fabius S. | Virginia. | Intermittent Fever. |

| NAME. | STATE OR COUNTRY. | SUBJECT OF THESIS. |
|---|---|---|
| Robinett, John R. | Mississippi. | The Medical Profession. |
| Rogers, James A. | North Carolina. | Inflammation. |
| Scarburgh, George T. | Virginia. | Scarlatina. |
| Scearce, J. B. | Kentucky. | Differential Diagnosis. |
| Scott, W. J. | Alabama. | Menstruation and its Diseases. |
| Sears, John H. | Virginia. | Wounds. |
| Sencindiver, Lewis M. | Virginia. | The Practice of Medicine. |
| Seymour, Edward W. | Connecticut. | Insanity. |
| Sheets, Abraham (M. D.) | Ohio. | Scarlatina. |
| Shotwell, C. H. | Missouri. | Conservative Influence of Pain. |
| Shurlock, William Charles | Pennsylvania. | Anatomico-physiological Peculiarities of the Genital Organs of Woman. |
| Sims, William B. | Virginia. | Acute Laryngitis. |
| Smith, D. M. | North Carolina. | Inflammation. |
| Smith, T. Albert | Georgia. | Intermittent Fever. |
| Smither, Charles G. | Mississippi. | Veratrum Viride. |
| Snodgrass, William | Virginia. | Inflammation. |
| Snow, J. B. | Indiana. | Varicocele. |
| Snowden, Harold | Virginia. | Bilious Remittent Fever. |
| Stacy, R. Q. | Georgia. | Absorption. |
| Stephenson, J. Thomas | Kentucky. | Theory of Inflammation. |
| Stewart, A. E. | Illinois. | Pneumonia. |
| Stewart, John R. | North Carolina. | Glossitis. |
| Stover, John M. | Indiana. | Veratrum Viride. |
| Thatcher, John P. | Missouri. | Infantile Convulsions. |
| Thomas, Jerome B. | Illinois. | Intermittent Fever. |
| Towle, Samuel Knapp | Massachusetts. | The Physician. |
| Townsend, G. F. | Maine. | Acute Gastritis. |
| Tribou, N. M. Jr. | Massachusetts. | Typhoid Fever. |
| Trippe, Henry W. | Georgia. | Mineral Acids as Irritant Poisons. |
| Trotman, Elisha | Tennessee. | Entero-mesenteric Fever. |
| Turner, J. D. | Virginia. | Phthisis. |
| Turner, J. H. Jr. | Mississippi. | Chloroform. |
| Vance, Thomas J. | Louisiana. | Dysentery. |
| Vastine, J. H. | Pennsylvania. | Puerperal Convulsions. |
| Walker, Delavan N. | New York. | Enteritis. |
| Walker, T. F. | Georgia. | Conservative Influence of Pain. |
| Ward, Daniel O'Connell | New Jersey. | Duties of the Physician in the Lying-in Room. |
| Warnock, James T. | Alabama. | Signs of Pregnancy. |
| Warren, Orin | Maine. | Croup. |
| Watkins, Joseph F. | Virginia. | Cathartics. |
| Webb, Joseph B. | Virginia. | Death. |
| Webb, S. V. | Alabama. | Concussion of the Brain. |
| Weever, John B. | Indiana. | The Actual Cautery. |
| West, Hilborne | Pennsylvania. | Traumatic Tetanus. |
| Wharton, John S. | Virginia. | Anatomical Changes of the Female Reproductive Organs during Pregnancy. |
| White, Demosthenes | Missouri. | De Digestione Apparatuque Digestionis. |
| Willets, J. Howard | New Jersey. | Erysipelas. |
| Williams, Urbane V. | Kentucky. | Apoplexy. |
| Willis, T. Hayward | Florida. | Intermittent Fever. |
| Wilson, John W. | Virginia. | Conservative Influence of Pain. |
| Wright, Astley Cooper | Kentucky. | Amenorrhœa. |
| Young, George Kemper | Virginia. | Venesection. |

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